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ABSTRACT

The monograph on creative arts for severely handicapped persons presents 18 papers on program development and implementation. Among topics addressed are personnel preparation, self expression as a human right, mainstreaming severely and profoundly handicapped children in creative arts, square dancing, adapting wheelchair dance, arts for the visually handicapped, theatre for the deaf, drama for the mentally retarded, research in creative arts for the handicapped, music and rhythms, motor creativity, and motion photography. (CL)

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CREATIVE ARTS FOR THE SEVERELY HANDICAPPED

U.S. DEPARTMENT OF HEALTH,
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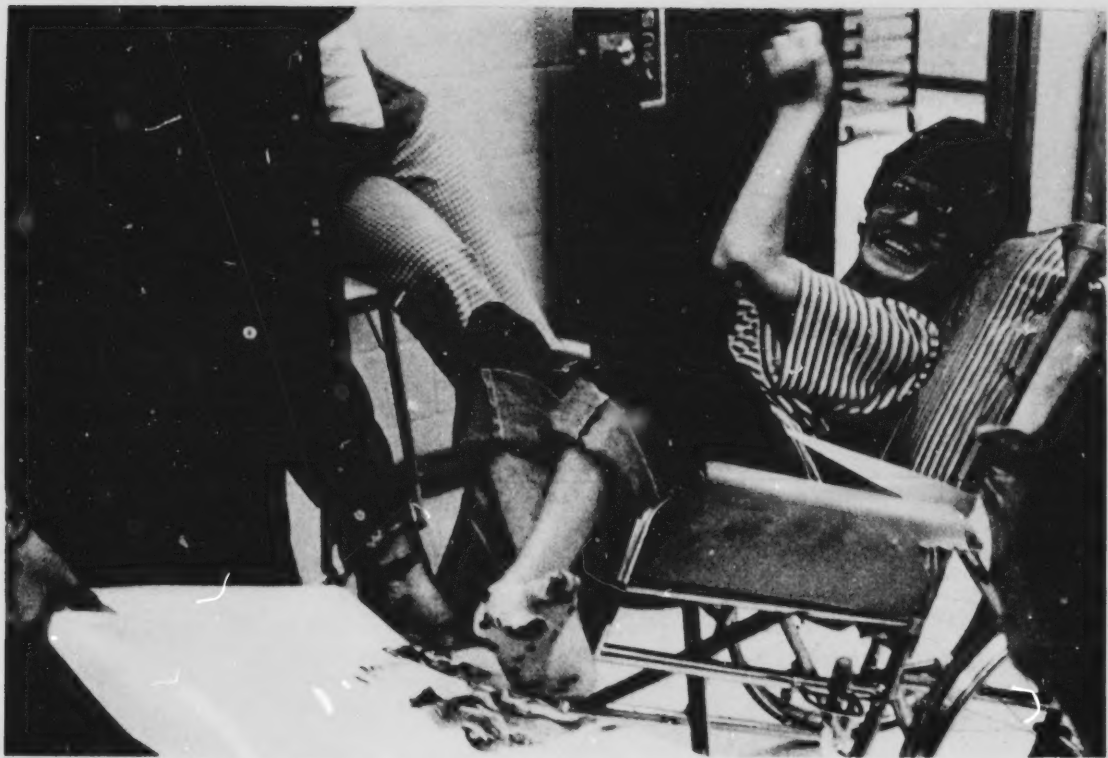
The severely handicapped children at the Denton ARC Developmental Center, the Denton State School, and the Fort Worth State School who have allowed us to test the appropriateness of our arts activities with them and, in so doing, have enriched our lives

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Finger Painting With Feet

A CREDO

We believe:

That there are more than 8 million handicapped children and youth in the United States; that the special educational needs of such children, especially the severely handicapped, are not being fully met;

That these educational needs include training for wise, healthy, and productive use of leisure time now and for the adult years;

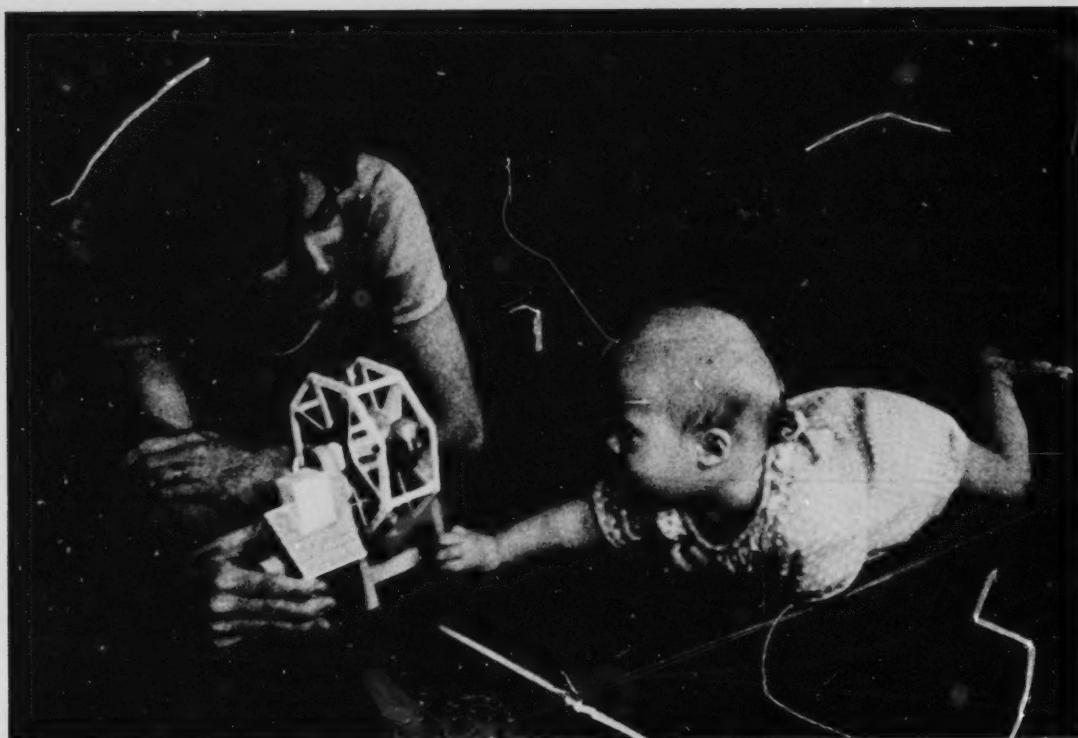
That handicapped persons because of problems in securing employment, often have an abundance of leisure time;

That the creative and/or expressive arts can offer viable learning experiences which enrich the quality of life;

That the creative and/or expressive arts should be an integral part of special education, including physical education and related services as described in P. L. 94-142;

That no architectural, attitudinal, nor aspirational barriers should deny handicapped citizens of America the educational services needed for enjoyment of and participation in the creative arts.

Claudine Sherrill
Editor



**PERSONNEL PREPARATION IN CREATIVE ARTS FOR
THE HANDICAPPED: IMPLICATIONS FOR
IMPROVING THE QUALITY OF LIFE**

Claudine Sherrill and Rosann Cox
Texas Woman's University at Denton

Every child is a gift of God and every child of God has a potential for talent; a capacity for creativity; and a right to enjoy to the fullest the beauty and vitality of the arts.

The talent of every child is precious to us all--the creativity of every child can enrich us all. The joy of every child exposed to the arts is a blessing to us all.

Only when every child in our society can be assured the opportunity to share in an appreciation of the arts, can all of us claim a share in the wonder of the talent, the creativity, and the joy of every child.

--Jean Kennedy Smith
from her acceptance speech,
New York Humanities conference.

Creative arts programs for the handicapped must be approached with the belief that the arts have a contribution to make to all students and that the handicapped have needs which are common to all children. Every child should be allowed to explore his talents and skills and learn to shape his thoughts and feelings into a form of artistic expression. Exposure to the arts as a spectator is undeniably important and culturally enriching, but the acts of participating, discovering, feeling, sharing, and shaping his ideas are necessary in order for the child to become an active participant in the creative arts.

Research Findings Concerning Creativity

Little research has been conducted on handicapped children's potential for creativity. Yet over a decade ago Torrance (1960), Getzels and Jackson (1962), and Wallach and Kogan (1965) indicated that there was little relationship between creative thinking ability and the generalized ability measured by intelligence tests.

Pioneers in research on the creativity of mentally retarded children include Tisdall (1962), Stern (1964), Kelson (1965), Rouse (1965), Smith (1967), Pollack, Pollack, and Tuffli (1973), and Sherrill and Rowe (1975). While the research designs and specific methods of collecting data vary for these investigators, there seems to be general agreement on two findings: (1) children of normal intelligence score significantly higher than retarded children on verbal measures of creativity, and (2) there are no significant differences between retarded and nonretarded children on nonverbal measures of creativity. This latter finding forms a strong rationale for use of the creative arts in the education of the mentally retarded, particularly if we believe in individualized educational planning based on strengths rather than the weaknesses of children.

The nonverbal measures of creativity reported in the more recent research with mentally retarded children are either drawings or gross body movements. Most often used are adaptations of the incomplete Figures and Circles subtests of the Torrance Tests of Creativity (1966). The first subtest involves adding lines to incomplete figures in an effort to develop interesting objects or pictures. In the circles subtest, the subject is challenged to make objects or pictures from 36 circles, each about the size of a quarter. The Wyrick Tests of Motor Creativity (1968) include such challenges as moving the body back and forth between two parallel lines in as many ways as possible, moving in as many ways as possible from one end of a balance beam to the other with the hips always held higher than the head, and moving balls toward a wall in as many different ways as possible. Both the Torrance and Wyrick tests focus upon recognized components of creativity: originality, fluency, flexibility, and elaboration.

Pollack, Pollack, and Tuffli (1973) suggest that fluency may provide the best base for determining creativity abilities at all intelligence levels. They agree, however, with other researchers who stress that fluency alone is insufficient for measuring creativity and state that teachers should assess other traits involved in the total process of creativity.

Facilitation of Creative Behaviors

Personnel preparation in creative arts for the handicapped should begin with an understanding of creativity, what it is, and how it can be fostered. Table 1 describes pupil behaviors in the creative process which are well accepted by both researchers and educators.

TABLE 1. CLIENT BEHAVIORS IN THE CREATIVE PROCESS*

Behavior	Meaning
Cognitive	
1. Fluent Thinking To think of the most	Generation of a quantity, flow of thought, number of relevant responses
2. Flexible Thinking To take different approaches	Variety of kinds of ideas, ability to shift categories, detours in direction of thought
3. Original Thinking To think in novel or unique ways-	Unusual responses, clever ideas, production away from the obvious
4. Elaborative Thinking To add on to-	Embellishing upon an idea, embroidering upon a simple idea or response to make it more elegant, stretching or expanding upon things or ideas

Affective	
1. Risk Taking To be challenged to-	Expose oneself to failure or criticisms, take a guess, function under conditions devoid of structure, defend own ideas
2. Complexity To have courage to-	Seek many alternatives, see gaps between how things are and how they could be, bring order out of chaos, delve into intricate problems or ideas
3. Curiosity To be willing to	Be inquisitive and wonder, toy with an idea, be open to puzzling situations, ponder the mystery of things, to follow a particular hunch just to see what will happen
4. Imagination To have the power to-	Visualize and build mental images, dream about things that have never happened, feel intuitively, reach beyond sensual or real boundaries

*From the Total Creativity Program by permission of the author Frank E. Williams. This program, comprised of several volumes, packets, and tape cassettes, is distributed by Educational Technology Publications, 140 Sylvan Avenue, Englewood Cliffs, New Jersey 97632.

Applications of the content of Table 1 to the movement exploration approach to teaching creativity are discussed by Sherrill in her 1976 textbook, Chapter 3. Ernie Bundschuh, adapted physical education specialist at the University of Georgia in collaboration with his colleagues Carter and Richmond in psychology (1973) and Sherrill in collaboration with Joanne Rowe, now at North Carolina Central University in Durham (1975), have adapted the Wyrick Tests for Motor Creativity to mentally retarded children. The University of Georgia study involved children ages 7-16 in motor creativity experiences with ropes, hula hoops, parallel lines, pasteboard box, maze, tin cans, ball-wall, frizbee, ball-hoops, and paper plates. The Texas Woman's University study involved children ages 2-7 in motor creativity experiences on the Lind Climber, a novel play apparatus. The Lind Climber motor creativity research design is now being replicated with the Trestle Tree movement education apparatus from London (Sherrill, Lubin, and Routon, 1977).

The creative arts provide a unique opportunity for success for handicapped children because there is no right or wrong way to fulfill an assignment in terms of artistic expression. The sense of success is an important consideration in any endeavor but it is especially valuable to the handicapped who meet failure regularly. The handicapped child can become aware of new possibilities for expression through the creative arts. Two illustrations of the self expression activities of children in special education provide evidence of their relatively untapped creative potential. The first focuses on painting while the second describes a collection of poems and pictures.

Stabler, Stabler, and Karger (1977) report a study in which paintings by 11 severely retarded children (mean IQ=23.4; mean age=18.4), 11 moderately retarded children (IQ=57.5; mean age=14.9), and 15 nonretarded children (IQ=115.0; mean age=16.6) were evaluated by 80 judges with and without art training. Each subject did a total of five paintings, one during each painting session. The resulting 185 paintings were photographed in color for slides that were presented in random sequence to the judges. Statistical findings showed that judges with art training did not differentially rate the art of nonretarded and retarded persons. The researchers conclude,

Engaging in painting allows a person to "do something" with his experience, disciplines him to see and integrate internal and external realities, provides a chance to transmit an emotional truth that may be impossible to verbalize, and generally facilitates self-actualization. These benefits are universal and do not depend on intelligence, technical ability, or number of paintings that one can sell or is invited to exhibit.

The other illustration of artistic talent is a book of 38 poems and 11 drawings entitled Choose to Be Good or Bad. The poems and pictures were created by students in Special Education classes at the McEvoy Educational Center as part of the Poet-Artist in the Schools program, a pilot program of the New York State Council on the Arts. What better way to enhance the self concept of children than to provide reinforcement of artistic expression by putting their works in print?

In one of the many IRUC (Information and Research Utilization Center) publications funded by the Bureau of Education for the Handicapped, Julian Stein and staff present many other illustrations in arts for the handicapped, including excellent bibliographies (AAHPER, 1975). Additional materials to be used in professional preparation in arts for the handicapped can be obtained from a joint project of the National Endowment for the Arts and Educational Facilities Laboratories. The address is ARTS, Box 2040, Grand Central Station, New York 10017.

The widely accepted concepts of zero-reject and appropriate education in the least restrictive environment should be applied to creative arts education. Teachers, recreators, and parents need specialized training for the development of teaching competencies in the creative arts and the full utilization of community resources for providing arts experiences.

Emphases in Professional Preparation

While the specific competencies to be achieved in personnel preparation will vary according to the length of the inservice or preservice training provided, the following topics should be addressed as they relate to the generic roles which personnel may assume.

1. Assessment, appraisal, or diagnosis of the needs of handicapped children and youth with particular emphasis upon leisure time practices. How does the handicapped child spend his non-school hours? How will he spend his non-work time as an adult? What knowledges, skills, understandings, and appreciations about the arts does he possess already? Which ones necessitate individualized educational planning?
2. Leisure counseling, both individual and family. This role necessitates further appraisal skills in answering such questions as: how does a handicapped child affect family recreation and/or use of leisure time? Which arts activities can be engaged in at home, at school, at community facilities?

3. Purposive intervention of an educational, recreational, or therapeutic nature to change behaviors (including attitudes) in a positive way, thereby facilitating increased involvement in the creative arts and improved quality of life for handicapped child as well as for his family members.
4. Mainstreaming role includes tasks inherent in integrating handicapped children in the creative arts in the least restrictive environments possible, i.e., community resources whenever possible. This task generally focuses upon the elimination of architectural, attitudinal, and aspirational barriers.
5. Resource room role includes individual and small group learning experiences in the creative arts when the mainstream setting is not sufficient for optimal growth and development.
6. Evaluation role is continuous and entails human management skills in that it is achieved through multidisciplinary input from all groups involved. Evaluation may be of a child, his family, the teacher or personnel providing learning experiences, or the creative arts program as a whole.
7. Administrative role implies organization of all resources (human, physical facilities, etc.) to provide optimal learning experiences in the creative arts for handicapped children.
8. Advocacy role encompasses use of legislation and litigation to achieve rights of handicapped, also extending these rights in legislation to more emphatically include the arts as well as an improved quality of leisure.
9. Research (of an action nature) entails adapting creative arts activities to the interest and skill level of the handicapped; developing, testing, and validating assessment tools in the creative arts as well as learning modules; and determining behavioral changes in handicapped children which result from creative arts training.

Jean Kennedy Smith, in the opening quotation, implies that the quality of life for all of us will be enriched when professional preparation enables us to "share in the wonder of the talent, the creativity, and the joy of every child." Philosophers almost from the beginning of time have told us that the humanness of life depends above all on the quality of man's relationships to man, on our capacity to share the things we love, and on our success in utilizing the creative potential of all.

William Hillman, advocate for the arts in the Bureau of Education for the Handicapped, Washington, D. C., applies these concepts to professional preparation when he states,

Developing a leadership that will do its best to improve the "quality of life" for the consumer takes on many faces. These faces include sound professional preparation in an institution of higher learning, strong practicum and field work experiences and good articulation with other professionals. . . . To paraphrase John W. Gardner, the struggle begins with the preservation of our resources both natural and human. It further extends to the use of leisure and to the pace of human life.

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SELF EXPRESSION THROUGH THE ARTS: A HUMAN RIGHT

Wendy Perks
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National Committee, Arts for the Handicapped

We are living in a world of too muchness. As we drive down highways our senses are bombarded by sights, sounds, smells, tastes, movements. An endless stream of sensory stimulation attacks our systems. In education we talk about skill development, socialization, behavior modification, mainstreaming, cognitive growth, psycho-motor coordination, affective behavior, career education, individual education plans, leisure education, a basic education--the list is endless. Why then consider the arts where there is already too much? Are the arts another panacea for all the problems surrounding those people afflicted with emotional, physical, mental handicapping conditions?

I believe the arts encompass something larger than all these issues, and at the same time smaller than all these issues. Larger--because the arts involve a basic human need--the need to create. It is the basic right of all men to create meaningful forms of self-expression. Indeed, man's ability to express himself through the arts--to create meaningful forms of self expression--is what separates him from all other animals. Smaller than all these issues--because the arts essentially involve people working with the material objects that surround them. Multi-million dollar buildings, intricate equipment, sophisticated libraries and resources. The resources are available for creative arts experiences to occur in every school in this nation. Administrators and teachers must simply activate the artistic process.

Thomas Wolfe, "Story of a Novel," makes an eloquent statement about the creation of a novel. His thoughts reflect the nature of man's basic need to create:

It seemed that I had inside me, swelling and gathering all the time a huge black cloud and that this cloud was loaded with electricity, pregnant, crested, with a kind of hurricane violence that could not be held in check much longer; that the moment was approaching fast when it must break. Well all I can say is that the storm did break. It came in a torrent, and it is not over yet.

A storm has broken across the nation. Handicapped people are demanding their human rights. They are demanding rights to

recreation
medical services
education
legal protection
building access

through Section 504 of the 1973 Rehabilitation Act. This is indeed an important "Bill of Rights" for handicapped people.

We know that 12 per cent of the estimated 8 million handicapped children in this country have no opportunity to experience the arts. (No statistics are available for the adult population.) The arts are man's most basic means of self expression and communication. To deny man this right is to deny his human rights. The arts offer each human being the opportunity to make his mark, to say "I am."

Recognizing that the arts can strongly affect the quality of life for all handicapped children and realizing the need to provide expanded arts opportunities for all handicapped children and youth, the National Committee, Arts for the Handicapped was established. The National Committee, Arts for the Handicapped is composed of leaders from major national arts organizations, organizations representing handicapped citizens, general education organizations, and private foundations. Funding support from the Alliance for Arts Education, Bureau of Education for the Handicapped, Department of Health, Education, and Welfare--Division of Arts and Humanities, the Joseph P. Kennedy, Jr. Foundation has allowed the Committee to focus its attention on three major national goals:

To research and disseminate information about curriculum and instruction in the arts for the handicapped.

To exemplify model arts programs that may be successfully used with the handicapped.

To increase the number of handicapped students served by arts programs by 200,000 per year for five years.

During 1976-1977 the National Committee fostered the growth of arts programs for handicapped children and youth through three major implementation strategies:

1. VERY SPECIAL ARTS FESTIVALS.
NCAH selected twenty pilot sites to develop and implement Festival programs. Each site reflected a strong capability to provide quality arts experiences for handicapped people.
2. Model Site Programs.
NCAH identified and supported model arts programs. Each model site emphasized a particular aspect of arts programming, as well as provided a wide range of arts experiences for all handicapped children and youth.
3. National Awareness Program.
Through publications, media presentations, and a series of special projects, NCAH developed a greater public awareness of the need for expanded opportunities in the arts for handicapped children and youth.

As an arts advocate I believe that music, dance, drama, and art are man's natural and essential means for self-expression. They assist in leading man to an understanding of himself and the world in which he lives. Man expresses his dreams, fears, desires, awe, and wonder of life through the arts. Since the arts are integral to man, they must be central in the educational and life experiences of all people. Creative arts experiences can be a powerful vehicle for providing beauty and joy to people burdened by physical, emotional, or mental handicapping conditions. Arts programs for handicapped people assist in developing a heightened awareness of self in relationship to others and life.

I believe another storm has broken across the nation. There is a rebirth of an ancient wisdom; there is a national recognition of man's basic need and right to create. There is a growing awareness and acceptance of handicapped people as creative, productive, and artistic human beings.

Victor Lowenfeld (Creative and Mental Growth, Chapter XII) clearly addresses this issue:

It is one of my deepest innermost convictions that wherever there is a spark of human spirit--no matter how dim it may be--it is our sacred responsibility as humans, teachers, and educators to fan it into whatever flame it conceivably may develop. I venture to say that

the ethical standard of a society can be measured by its relationships to the handicapped. We as human beings have no right whatsoever to determine where to stop in our endeavors to use all our power to develop the uppermost potential abilities in each individual. We all are by nature more or less endowed with intrinsic qualities and no one has the right to draw a demarcation line which divides human beings into those who should receive all possible attention in their development and those who are not worth all our efforts. One of these intrinsic qualities is that every human being is endowed with a creative spirit. Soon after birth he begins to investigate and explore and use this ability for new adventures. New findings in psychology consider this one of the "basic drives," a drive without which we cannot exist; the ability to create is probably what distinguishes man most decisively from the animal. Man creates; the animal does not.

With dedication and cooperation each state can provide quality art experiences for those children who have been denied the opportunity to paint the sunset, hear the verse, move with the wind, or play the melody.



MAINSTREAMING SEVERELY AND PROFOUNDLY HANDICAPPED CHILDREN IN CREATIVE ARTS

Joan M. Moran
Texas Woman's University at Denton

All too frequently architectural, attitudinal, and aspirational barriers have prevented and/or denied the severely and profoundly handicapped an opportunity for exposure to or involvement in the various art media. Yet, all human beings have a normal probability, capacity, and potential for talent and creativity in the arts. And, in "One Nation Under God," everyone has a basic human right to enjoy, to the fullest extent possible, the beauty and vitality obtainable through exposure to and participation in these various media. Such opportunities in the arts can contribute to, improve, and enrich the quality of leisure experiences for the handicapped.

Creativity is a condition of man that inspires the feelings necessary to produce, form, or bring to pass a work of thought or imagination which is new or different (Moran, 1977). It is based on man's total past experiences with people, things, and events. Although expressive forms and levels may differ, man is endowed by nature with the ability to express himself creatively. Therefore, all human beings have a normal probability of being creative and talented in one or more of the various expressive art forms. According to Lowenfeld (1964):

Creativity is an instinct all men possess.
. . . It is an instinct we primarily use to
solve and express life's problems.

Creative abilities begin to emerge in human beings by the end of babyhood (two to three years) as the child engages in imitative and symbolic play. Play experiences used by the child to test his cognitive and affective powers can be likened to the creative experiences of the mature artist who also tests and experiments in the process of producing an artistic endeavor. The artistic impulse is universal in children who are instinctively creative, curious, and interested in exploring their environment. Regretfully, the child's need for exposure to and experience with a variety of play environments, although frequently observable, is often disregarded. This lack of exposure exists despite the fact that philosophers, psychologists, sociologists, anthropologists, and educators have all written of the value and importance of play in the early developmental stages of man. Following are but two of the many existing endorsements of play:

. . . in teaching children, train them by a kind of game and you will be able to see more clearly the natural bent of each.

(Plato, 380 B.C.)

Therefore as I said before, our children from their earliest years must take part in all the more lawful forms of play, for if they are not surrounded with such an atmosphere they can never grow up to be well conducted and virtuous citizens.

(Socrates, 420 B.C.)

The truly creative child (handicapped or non-handicapped) at play often does not fit into society's mold. This problem is intensified by school systems which do not reward (in the form of grades) creative behavior because it is inconsistent with the serious work of learning. Such naturally creative talents are, therefore, often thwarted, ignored, or tossed aside by adults on the grounds that they work against long established human traditions. Yet, creativity in play is a necessary aspect in the total developmental sequence of the maturing child. Freud (1953) observed the creative aspects of play when he wrote:

We ought to look in the child for the first traces of imaginative activity. The child's best loved and most absorbing occupation is play. Perhaps we may say that every child at play behaves like an imaginative writer, in that he creates a world of his own or, more truly, he arranges the things of his world and orders it in a new way that pleases him better. It would be correct to say that he does not take his world seriously; on the contrary, he takes his play very seriously and expends a great deal of emotion on it. The opposite of play is not serious occupation, but reality. Notwithstanding the large affective catharsis of his play world, the child distinguishes it perfectly from reality; only he likes to borrow the objects and circumstances that he imagines from the tangible and real world. It is only this linking of it to reality that still distinguishes a child's "play" from "daydreaming."

According to Piaget (1962), creative play through art expression is the vehicle for spanning the transition between a child's play and the intelligent constructive activity of work. He describes the deliberate conscious illusion characteristic of both play and art as follows:

Play is accompanied by a feeling of freedom and is the herald of art which is the following of spontaneous creation.

Because art is skill in performance which is acquired by experience, study, or observation, anything done well is an art (Moran, 1977). For the severely handicapped child it may be an artistic achievement to perform a simple skill, such as moving the fingers to produce a few marks on a finger painting surface. The finger movements employed by a non-handicapped child engaged in the same task may produce more patterns but with less effort or thought. Because the beauty of art is in the eye of the beholder, who can say which is the greater artistic endeavor, especially if one remembers that anything done well, in accordance with the individual's ability to perform, is an art.

If the creative potential of the severely and profoundly handicapped are to be developed in the various art media, this segment of our population must receive early and frequent exposure to a variety of aesthetic and cultural activities which provide stimulation and enrichment. They must have opportunity to experiment with, feel, and explore rich and varied sensory inputs. The end of babyhood and the beginning of early childhood is the most appropriate time to begin developing the creative potential of both handicapped and non-handicapped children. At the same time, such viable learning experiences can contribute to the affective, cognitive, and psycho-motor development of these children.

Non-categorical, integrated play environments, if properly structured, can provide all children with the exposure needed to develop and nurture their innate powers to be creative. This is especially true when one considers that all children have common developmental needs. The only fundamentally different environmental feature for the handicapped, as opposed to the non-handicapped, is the need for extra sensory input to stimulate creative output.

Developmentally, the child progresses from imaginative play, to fantasy play, and finally creative play. Frequently the handicapped child's play is not as imaginative as that of the non-handicapped child's play. Instead, it is mechanical and repetitious. Constructive play experiences, however, help the unimaginative child gradually become freer and more imaginative in his play.

Development of the Imaginative Play Stage

Imaginative play is the forerunner of creativity. It promotes, within the child, an effective interaction with his environment. Through the symbolic make-believe which imaginative play provides, the child is assisted in assimilating reality at his own level. Imaginative play is an effective method for practicing various tasks and adult roles without fear of failure or excessive censure.

The proper selection of toys and play objects is imperative if imaginative play is to be developed fully in children. All children are great mimics. They can be encouraged to imitate good demonstrations, imitate actions of people, or pretend to be animals. It may be necessary at first to provide the child with extra input in the form of sensory stimulation, including kinesthetic experiences, and to allow time for him to repeat and practice his efforts at imaginative play. Such efforts will facilitate within the child the development of perceptual and cognitive skills.

Development of the Fantasy Play Stage

Fantasy play provides the child with a concrete method of expressing his feelings and aspirations. In addition, the playacting of fantasy play assists the child in overcoming the pain and fear experienced in his real world.

Children, especially the handicapped, long for constancy in their lives. They need a safe, accepting, predictable environment. If anything changes this, non-handicapped children will, in all probability, bring it back through play. Frequently, handicapped children lack the daring and energy to remake their world in play. They may be afraid of make-believe. To them, it may be a means of lowering their guard and leaving themselves vulnerable to the threats of the real world. Such children need to be taught the skills of fantasy play as a means of expressing the fears, hopes, and needs which are not satisfied in their everyday lives. When such fantasy play skills are developed, the children will be better prepared to adjust to difficult life experiences.

The development of fantasy play, like imaginative play, depends upon the proper selection of toys and play objects. Paint, clay, sand, and water are useful media for fantasy play. These materials can be used by the child symbolically as a means of expressing his fears, hopes, and needs. If this is going to succeed, however, the teacher must be sensitive to the child and his feelings. He must accept the child's attitudes and convey to the child a consistent and sincere belief in him. The

teacher must respect the child as he is and permit the child to express himself freely.

At first the child may express diffused and undifferentiated emotions. His feelings may be negative. He may have lost contact with the people and situations which originally aroused his feelings of frustration, anger, fear, or guilt. The child's emotions may frequently be magnified, generalized, easily stimulated or evoked, and no longer tied to reality.

The handicapped child may see himself as an inferior person, unloved, inadequate, and afraid of the consequences of his behavior. He may be threatened by criticism and punishment. Reward and approval may be perceived as attempts to change or modify him. Punishment and disapproval may be reminders and reflections of his past inadequacies, reinforcing his feelings of insecurity or terrifying him. However inadequate his feelings may be, and in spite of all allurements, he may struggle to maintain his own picture of himself.

The teacher should not attempt to modify the child or pressure him to change. He should respect and accept the child entirely. If the child feels secure and unthreatened, he can begin to express himself fully without feeling ashamed or guilty. The child will eventually learn to make decisions and to act spontaneously and confidently. He will grow within himself and gain a more realistic impression of himself. Eventually, the process of depicting his imaginary and real life through fantasy play will enable the handicapped child to resolve his emotional problems and interpersonal conflicts. He will have a socially acceptable method for the release of his emotional tensions.

Development of the Creative Play Stage

Creative play is thoughtful, exploratory play with materials, objects, feelings, and ideas. As the child manipulates, transforms, and explores these materials and objects with meaning and purpose to convey or fulfill his intent, he provokes an effective interaction with the environment and engages in the creative process. Creative play increases the child's insight and sensitivity by cultivating the senses and promoting the sensory involvement necessary for symbol formation. It encourages learning through exploration, experimentation, manipulation, and transformation, thus developing the child's interest and readiness for further discovery. The creative process expands the child's potential as it develops curiosity, flexibility, improvisation, commitment, and the courage to risk. With this freeing of the imagination, which results in a

relaxation from inhibition, the child gains greater psychological and physiological control. Psychologically the child refines his fantasy play into healthful and constructive creative play. Physiologically the child refines and enhances the development of his fine and gross motor abilities as he manipulates his entire body or its various parts. Thus, eye-hand coordination improves, visual skills required for reading and writing improve, the mental set for learning symbolic language is developed, and the problem-solving behavior which leads to learning, coping, and adaptation to change is promoted.

All children have creative potential. Creative play behavior can be nurtured in children. Rich and varied sensory inputs, including kinesthetic experiences, form the necessary basis for symbol formation and optimal cognitive development.

Developmental Stages in Symbol Formation and Creative Growth

Lowenfeld (1964) has identified six developmental stages in symbol formation and creative growth which correspond to Piaget's cognitive stages. These include:

1. Scribbling Stage: Two-four years. Dawn of symbol formation and self expression. Piaget's sensorimotor and preoperational stage.
2. Pre-Schematic Stage: Four-seven years. First representative attempts. Conceptual realism is projected through universal symbols. Piaget's intuitive stage.
3. Schematic Stage: Seven-nine years. Achievement of a form concept is realized through self-devised schemas. These schemas are modifiable expressive symbols for man and his environment. Piaget's preconceptual stage.
4. The Gang Stage: Nine-eleven years. Dawning realism is projected through representational symbols. Piaget's concrete operational stage.
5. Pseudo-Naturalistic Stage: Eleven-thirteen years. Optical naturalism and realistic symbols replace conceptual realism. Continuation of Piaget's concrete operational stage.
6. Adolescence: Thirteen-eighteen years. Period of crisis and decision. Representational or personal symbols. Piaget's stage of formal operations and deductive thought.

According to Michelman (1971), there are three stages of development in the creative process. The first is a manipulative stage that satisfies the child's tactile and emotional impulses. This is followed by an exploratory stage during which the child experiments and plays with the materials in his environment to discover their potential. The final level of development is a stage of form consciousness in which the child employs the materials in his environment to fulfill his intent and desire for expression.

Implications for Educators and Recreators

Teaching techniques, methods, procedures, and materials may, of necessity, have to be modified or changed to permit the free and spontaneous utilization of the creative abilities of each and every handicapped and non-handicapped child. The most important factor to remember is that all children should be free to explore and experiment with shapes, colors, textures, and three dimensional forms in an enriched, sensory-filled environment. The toys, raw materials, and physical objects used to engage the senses should be easily accessible to all children.

Typical art materials are attractive and educational because they leave children free to follow their imaginations wherever they may lead and provide varied and immediate sensory experiences. Scribbling and drawing activity should be encouraged. Finger paints are probably the most sensuous of all art materials. By using art materials the child learns a sense of color and the way colors can be combined to form new ones. Collage is an excellent art form in which the child pastes together paper, cloth, and other materials of different shapes and sizes, colors and textures to create a work of art. Sand, clay, blocks, water, and other media should be accessible.

Prefabricated stencils, molds, copying, or coloring books should NOT be used as they deaden the imaginative spirit and block creative growth. Meaningless repetition should be avoided. Because enforced controls discourage curiosity and inhibit spontaneous exploration of colors, shapes, and new materials, they should NOT be imposed on the children.

Creative play activity can be structured by limiting the number and kind of materials available to the child, specifying dimensions for the working surface, or setting time limits. On occasion the child should be permitted to struggle with self-imposed problems.

Creative art experiences contribute to the child's drive for mastery and understanding of himself and of the world's complexities. They also provide the child with a safe arena to exercise curiosity, flexibility, commitment, and improvisation. Such experiences initiate multi-sensory investigation of the physical world; stimulate imaginative exploration; provide endless opportunities for flexible approaches, change, and modifications; and provide necessary inputs to compensate for deprivations and deficiencies within self and the environment.

The strategy of choices and alternatives involved in creative art performance tasks promote involvement, flexibility, the beginnings of self-affirmation, and planned rehearsal for exercising judgment and decision-making. The child is an innate creator, designer, and inventive builder. He expends energy spontaneously in painting, drawing, modeling, or constructing. The art process is multi-faceted. It involves the child in perceiving the world he lives in; reacting to what he sees and feels; selecting, interpreting, and reforming elements; and communicating his emotions and insights through a variety of sensory art media. In turn, the child's creative expression mirrors how he feels, thinks, sees, and imagines. The interaction between self and the environment is the foundation for abstract intellectual processes. This interaction is a basic part of all creative experience.

As a result of federal legislation, architectural barriers are beginning to disappear. Regretfully, attitudinal and aspirational barriers which prevent total integration of the severely and profoundly handicapped cannot easily be removed with a hack-saw or bulldozer. Non-categorical, integrated play environments, however, can begin to hack away at prejudice as all children begin to accept one another because of their individual abilities and contributions rather than their disabilities. Such play environments, if properly structured, can also provide all children with the tools and materials necessary for the development of their inherent capacity and potential for creative and artistic expression.

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THE DANCE OF CHILDHOOD: FOCUS ON WELLNESS,
NOT EMOTIONAL DISTURBANCE

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Probably in no other field do we have to reckon with so many unknown quantities and nowhere do we become more accustomed to adopting methods that work, even though for a long time we may not know why they work. The irrational fullness of life has taught me never to discard anything, even when it goes against all our theories or otherwise admits of no immediate explanation.

--Carl G. Jung

Movement is non-verbal and yet communicates, and movements never lie. All children, especially severely disturbed children, explore, discover, understand, and cope with their world primarily on a pre-verbal level. The inherent needs of the severely disturbed child in growing and developing are the same as those of any child, even though the development may be arrested or slow.

Movement is for growing and is essential for physical and mental well-being. A very young child discovers movements and experiments with them instinctively as he stretches, turns, rocks, climbs, and falls. He begins to discover the potentials inherent in his body. As his coordination increases and his needs and desires grow, he starts to experiment. In this way he learns how to alter the speed, dimension, direction, flow, and energy of his movements to suit his purposes. For a child, every experience involves physical exploration.

As a child grows older, he learns to internalize the control of his body and to manipulate his environment in a more self-directed, self-disciplined manner. The other side of the coin must not be forgotten as the child is learning to internalize control. Spontaneity must be encouraged, nourished, and given a supportive environment in which to grow. As the growth and integration of these polar opposites develop, the child learns that he can use movement to express himself in ways uniquely his own. He grows in awareness and perception through each new discovery. His self-confidence increases as he realizes his ability to organize, alter, and develop what he has discovered. His rate of personal development is

directly related to the amount of freedom he is given for exploration and the degree to which he is encouraged to use his own ideas and imagination.

Unforced, spontaneous movement is the dance of childhood. If he is permitted, the child will dance out spontaneously the compelling impulses of his life. And if given the opportunity to do so, he will feel gratification and pleasure in the experience of being able to express them so vividly with his body.

The use of dance and rhythmical movements can provide special children with such opportunities. Dance or movement therapy utilizes techniques of creative movement, spontaneous dance, pantomime, and other aspects of creativity. I contend, however, that when working with severely disturbed/psychotic children, dance/movement therapy is a more appropriate means to an end than would be an educational approach to creative movement.

Authentic movement responses (spontaneous, involved movement resulting from body awareness and accompanied by a readiness to move) are capable of eliciting unconscious material which will involve experiencing and relating on a feeling level. When this material starts to emerge from within the person, the phenomenon is much like a corked bottle being uncorked and tipped over. What flows forward is not a consciously selective process; it all comes forth. A trained dance/movement therapist must be prepared to guide and interact with this flow, to observe and interpret the movements, and nurture and foster that all-important central aspect, the relationship between therapist and child.

Dance and movement, as therapy, require intentional therapeutic intervention based on a relationship between child and therapist, with dance activities being specifically designed to promote the healthy integration of mind and body. What is dance/movement therapy? What are its purposes, its aims, goals and objectives? What are its elements when modified for severely emotionally disturbed children? The answers to these questions will be the focus of this paper.

What Is Dance/Movement Therapy?

Dance/movement therapy is a form of psychotherapy in which the therapist utilizes movement interactions as the primary means for accomplishing therapeutic goals. The dance therapist extrapolates those ingredients from dance that enable the child to move toward a healthier functioning; movement is the medium used in creating a new dance--a dance of health.

Movement can acquaint the child with his physical self as the source of his felt-experiencing process. It thereby puts the child in touch with what his actual felt experience is. Movement then allows an opportunity to express outwardly and confirm these inner felt processes in a safe manner. Perhaps the child will eventually be able to achieve the next step, which is verbalization of these experiences, thereby clarifying further the ambivalent personal feelings, explicitly validating his experience and acknowledging full responsibility.

Dance therapy emphasizes rhythmical, expressive movement as a means of establishing initial contact with children who have lost that capacity. Sometimes the first step towards socialization is the moving in unison that occurs in a group hello.

But first, of course, a child must have a sense of identity and this requires the existence of another by whom one is known. Direct imitation of the child's movement, called reflecting or mirroring, can help to establish this crucial aspect of development. Dance therapy provides a safe and constructive atmosphere in which children can go through developmental stages, thereby increasing their trust and self-image. A cardinal rule under which dance therapists operate in order to create this safe and supportive atmosphere is to realize that no movement is "bizarre" or wrong. Each child is accepted where he is. All movement is acceptable and the dance therapist can reflect this by taking on the movement of the child, i.e., moving as the child does.

Dance therapy is expressive, developmental, and physically integrative. It reduces fragmentation and constriction. It is inclusive, meaning that the dance therapist can work with groups or individuals; it includes verbal as well as non-verbal communication. It can be carried out in the community or the back ward of the hospital. No group nor diagnostic category is exempt from the benefits of dance therapy.

Who Is the Dance/Movement Therapist?

Who is the dance/movement therapist? She or he is usually a person who is willing to take a job that is low paying and not well-entrenched in institutional hierarchies. She must have an extensive dance background. The more training one has had, the more sensitive one becomes to relating in a kinesthetic sense. The therapist must always work on increasing her own movement repertoire which will enable her to relate more thoroughly, intuitively and spontaneously. She must be able to suggest alternative movement patterns. She does not perform; she interacts and reacts. Her educational background is predominately in psychology or special education, along with basic movement knowledge such as kinesiology and exercise physiology.

Her observational skills must be well developed. The dance therapist can use spontaneous dance for evaluating the needs of the child. Several diagnostic or assessment tools have been developed for this purpose, effort-shape analysis being the most notable.

The dance therapist often focuses on these aspects of movement while observing: (1) degree of organization/disorganization; (2) tension level; (3) action level; (4) directness/diffuseness; (5) purposefulness; (6) degree of self-control; (7) self-injury behaviors; and (8) degree of subtleness/overt-ness of expression. She is constantly sensitive to where the child is and encourages the development of that uniqueness instead of imposing style. She is able to perceive and relate to the integrated aspects of each child in order to nurture that seed of health that exists in everyone. She is aware of the life asserting elements of dance and its ability to renew a feeling of wholeness.

What Are the Goals of Dance Therapy?

What are the goals of dance therapy? Many practitioners have postulated various objectives and aims. The following list is a synthesis:

1. Increase awareness
 - a. heighten kinesthetic sensitivity
 - b. increase awareness of self
 - c. increase awareness of the space and its occupants around the child
2. Extend flexibility of a person's movement and behavior repertoire
 - a. gain skill for relating positively and satisfactorily
 - b. acquire constructive coping responses to frustration and negative situations
3. Acquire self acceptance through acceptance and being accepted through the movement experiences
4. Experience success in efforts to achieve, learn, and enjoy
5. Release tension
6. To move from a one-to-one relationship into a group situation thereby transferring more responsibility to the child for his own development and behavior
7. To provide an atmosphere in which conflict and hostility can be constructively channeled into body action and dance

What are the elements of a modified dance therapy program? In the beginning there must exist much structure. As awareness and trust evolve, the structure can lessen.

Sounds, instruments, and music are part of the dance therapy situation. They are used, however, only when the child indicates a readiness for such devices. It is advisable to start with a comfortably small space since the child can be overwhelmed by too much space. In a small group more interaction and observation can occur. Each therapist and her situation are unique, and by trial and error she will discover the best way to begin for her, her children, and her space.

Dressing in comfortable, flexible clothing is essential. The removing of shoes can become a ritual that can be a cue to elicit the appropriate psychological and physiological set for the child.

A circle is a natural formation for children and is one in which they can see each other sharing their movements. A feeling of unity is created. As often as possible, the therapist should try to follow the lead of the children. Those who do not wish to join can have a space left open just for them when they are ready to join. The floor is a structural limit and an awareness of this fact can help the children come together. It is the common base of support and is the surface on which they are grounded.

The therapist can use polarities or imitation very effectively. For instance, she can intersperse intense, excited movement with relaxation, again taking her cues from the children. She can move in a manner opposite to that of the child's movement or imitate it. She can exaggerate or understate the movements.

Putting all the above elements together provides a framework within which a dance therapist may work. Now, what are the methods? Delaney has summarized these methods:

1. Spontaneous dance allows the utilization of primitive motility reflex patterns, auditory reactions, visual activity and spatial relationships. Giving expression to and stimulating primitive, unconscious fantasies allows children to express personal aims, capacities, and conflicts.
2. Improvisation allows a freedom for setting out to solve a problem by beginning with no preconception as to how it will be done and

by permitting things in the immediate environment to work for the child in solving the problem.

3. Experience in pantomime activities offers opportunities for working with half-dance, half-acted, imitations of real actions and events through an experimenting with a mixture of impersonation, dramatic movement, and dance, using large bodily movements. It helps to establish contact with reality and provides practice in the selection of appropriate movements for expressing specific emotions or feelings and necessitates a great deal of personal involvement.
4. Dramatic play provides children both a safety valve and an emotional catharsis. It offers opportunities for emotional control and inner self-disciplining.
5. Movement exploration is used as guided discovery in helping children find their own ways of working with images.
6. Relaxation techniques also offer ways for children to get in conscious touch with their bodies.

The task of the dance therapist is not always an onward and upward experience. There are many delays and setbacks. Progress is notoriously slow and at times the therapist can become quite discouraged. A child psychologist once told a dance therapist that she might better understand what she was doing if she saw her work thusly: "You are providing an environment in which things will happen. Your job is to make that environment a special place and time where children may come and take or give as they can. Their ability to do so depends on many factors, most of which are out of your hands. What is important is that the opportunity for them to grow and learn through movement is left open to them."

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SQUARE DANCING FOR AMBULATORY SEVERELY
MENTALLY RETARDED CHILDREN

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Square dance is one of the most effective of the creative arts in teaching social skills. It also provides a medium through which the children can learn to respond to rhythm, follow directions, develop coordination, and learn balance. Properly taught, it can also lead to increased perceptual-motor efficiency. The activities which follow contribute specifically to laterality, directionality, and improved temporal and spatial relationships.

Laterality	Buzz Swing; Right and Left Hand Stars; Right and Left Elbow Swings
Directionality	Moving forward, backward, left, or right; Calls directed to opposites
Temporal Relationships	Stepping in place to the rhythm of the music; Walking in time to the rhythm of the music; Clapping rhythms

Teaching

Points to Remember

Select simple dances--simple dances may not need to be modified; if so very little modification will be necessary.

Select single and double visitation figure types--these figure types offer continuous repetition that enable children to remember their positions and direction of progression around the square. Symmetrical figures may be used with success. There is continuous repetition of all couples simultaneously executing the same action. Individual dancers progress around the set so that each has a new partner for the repetitions of the figure, such as "Arkansas Traveler."

Demonstrate--in addition to teacher demonstration, use various couples or individuals as models.

Dance with each child--this will help the child to acquire a feeling of rhythm and develop a sense of the line of direction.

Select any hoedown record--hoedown music makes learning simple because a continuous definite rhythm is present and there is absence of a clearly defined melody.

Select records without calls--this will give the teacher latitude in calling at different speeds, modifying the figure creating, or doing whatever is necessary.

Encourage children to help each other.

Keep the class or group under control--constantly remind the children to give their attention to what they are doing. Emphasize following directions.

Always give praise to individuals or to the class or group.

Methods and Materials

Masking tape can be used to indicate positions as shown in Figure 1. The tape should be placed on the floor in front of each couple's home position. This will help the children to maintain a square formation and form circles. A colorful wrist band or ribbon can be worn on the wrist to help the children to learn left and/or right. When the children are required to make whole turns or half turns, they should be instructed to focus on one object in the room that will serve as a cue to begin or stop.

When necessary, dances should be modified. This can be done by deleting original parts and creating substitute parts. For example:

Star By the Right (Traditional)

FIRST COUPLE OUT TO THE COUPLE
ON THE RIGHT
FORM A STAR WITH RIGHT HAND
CROSSED
BACK WITH THE LEFT AND
DON'T GET LOST
FORM A RING AND AROUND YOU GO

Star By the Right (Modified)

FIRST COUPLE OUT TO THE COUPLE
ON THE RIGHT (RED)
FORM A STAR WITH RIGHT (RED)
HAND CROSSED
BACK WITH THE LEFT (GREEN) AND
DON'T GET LOST
ONE STEP IN AND CIRCLE RIGHT
(RED)

To use the command "One step in and circle right" helps the children to begin and maintain a well formed circle while moving. In executing, one step is taken to a position just in front of the guide tape before moving to the right. The colors red and green have reference to the wrist bands which may be

worn to help the children learn right and/or left. The colors can be substituted in the command. If the children have difficulty forming stars with raised arms as shown in Figure 1, then modify by instructing them to lower the arms to the center as shown in Figure 2.



Figure 1 Star By The Right



Figure 2 Easier Progression For Star

The methods used to teach square dance to severely mentally retarded children do not differ very much from those used to teach normal children. Basically, it is a matter of modifying the dance skills and patterns of movement. Success in teaching severely mentally retarded children to dance is dependent upon an expedient and creative teacher.

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WHERE THERE'S A WILL: ADAPTING WHEELCHAIR

DANCE TO THE SEVERELY DISABLED

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Asked what they preferred to do at the next meeting of their Recreation Club, the group voted unanimously for dancing. But how do you dance with someone who is so severely handicapped he cannot maneuver his own wheelchair without assistance? Some of the group members had cerebral palsy; others were disabled by spinal cord injuries, polio, or spina bifida. Like all young adults, however, they wanted to dance!

Dance or dancing has many meanings. In working with the severely handicapped, dance may mean moving body parts in a rhythmic and patterned sequence accompanied by music. The movements of the body may consist of the following: a raising and lowering of the arms, clapping the hands, raising the feet, touching the feet together, touching the hands to the thighs, touching the hands to the knees, shaking the hands, feet, head, and bending the upper body at the waist forward, to name a few.

Dancing offers many benefits for the severely handicapped. Social, physical, and psychological are a few of the values derived from dancing. Social benefits derived from dance are the contact with other people who may have dance as a hobby; the opportunity to overcome shyness in order to develop new friends with common interests; a chance to mingle with individuals of the opposite sex and a different handicapping condition; and new experiences to teach etiquette and respect as one meets and converses with others. This is part of the socialization process that non-handicapped individuals have experienced and taken for granted. However, many severely handicapped persons have not had the opportunity to socialize because of limited transportation, restrictive living environment, and architectural barriers.

The physical benefits are the opportunity to develop rhythm, balance, and poise. Physical fitness can be improved by a repetition of the dances which demands continuous movement of the body and stimulates the cardiovascular system.

Another important benefit for the severely handicapped population is psychological. The participants are experiencing the satisfaction of achieving, maybe for the first time in their life. The experience may be unique with the learning

of new movements and new routines. There is an opportunity for the individual to learn about his body and to find an outlet for his emotions. Dancing is a lifetime activity which should contribute toward the severely handicapped being accepted by society.

As the severely handicapped are confined to wheelchairs, there are many factors to consider when selecting a building in which to dance. Some of these considerations are the size of the room, the doors and doorways, the floor, restrooms, water fountains, and parking. The selected room should be large enough to allow movement of the wheelchairs without repeated collision of one wheelchair into another. The controls for the room such as lights should be placed within easy reach of the people in wheelchairs. Other criteria to be followed include:

1. The doorways should be at least thirty-two inches wide in order for the wheelchair to move easily through. The doors should open and close with ease.
2. The floors should be of a non-slippery consistency without carpeting. If carpeted, the indoor-outdoor carpet is better than a deep pile carpet, allowing better mobility.
3. The restrooms need to have an area large enough to allow the wheelchairs to be turned. One toilet stall must be of proper dimensions to accommodate a wheelchair.
4. Water fountains should be no higher than three feet with controls and spout at the front.
5. Parking area for handicapped individuals only should be properly identified and close to the building. Ramps are necessary if there are steps at the entrance to the building and in the pathway of the designated dance room.

The teaching techniques used with the severely handicapped are similar to those employed with other populations with a few modifications. The dance session begins by becoming acquainted with the dancers. This is achieved through the use of name tags on everyone to add more humanism to the session. The ambulatory people should pin their name tags on their waist in clear view of the wheelchair participants. The dance instructor should talk to the group about what is going to happen during the session and the dances to be learned. The general rules for the session, including the use of building, the location of the restroom and drinking fountain, should be announced.

The record player with an adjustment control which can slow the music down is ideal as more time is needed than usual to make maneuvers with wheelchairs. A selection of music which has a strong beat and easy rhythm is recommended. Allow the dancers time to listen to the music at regular speed, then slow the music to the danceable speed. Next, have the dancers clap their hands to the underlying beat. Demonstrate the dance as the dancer would be executing it. Arrange dancers into the desired formation in the room. Walk through a part of the dance with the instructor being in the view of each dancer. Because the severely handicapped are unable to maneuver their wheelchairs, ambulatory volunteers are needed to move the wheelchairs. This couple counts as one unit when adapting dances. Executing a walk step for four beats would be cued as walk, walk, walk, walk. For the non-ambulatory people the cue would be roll, roll, roll, roll, or roll, 2, 3, 4. We can visualize that our non-ambulatory participants are receiving nothing but a nice ride if the wheelchair dance contains mainly walking steps. We need to involve them more actively. Therefore, routines are developed for involvement of the upper body. The routine may consist of slapping the hands on the thighs for the count of one, then clapping the hands together in front of the body for the count of two, snapping the fingers in the air for the count of three, and returning to the front of the body with a hand clap for the count of four. Many variations are possible, but the leader should be consistent with one pattern for each dance, keeping dancers active by moving parts of the upper body, the lower body, and/or both.

The dance should be taught in parts, separately without music using many repetitions; then practiced to music at the reduced tempo with many more repetitions. The session continues in this manner until the entire dance has been taught.

The instructor should continuously be giving praise and encouragement to the group. Cueing by use of a microphone or descriptive words in time to the music is most helpful to the dancers. The instructor should be enthusiastic, positive, and possess a genuine interest in the teaching of dance to others.

In instructing the severely handicapped to dance, let's remember to smile. A smile will soon become contagious and what can be more rewarding than a room of smiling dancers. These severely handicapped people need a person who is "special," therefore be warm, friendly, helpful, and happy!

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For further information on wheelchair activities, subscribe to Sports' N Spokes, 6043 North Ninth Avenue, Phoenix, Arizona 85013, \$5.00 per year.

For wheelchair square dancing instructions on a 30-minute cassette tape, \$3.00. Send name, address with zip code, to Colorado Wheelers, 525 Meadowlark Drive, Lakewood, CO 80226.

AESTHETIC AWARENESS THROUGH A MULTISENSORY APPROACH
TO THE INTEGRATED ARTS

Lauren Routon
Texas Woman's University

The desire of man to express himself is a basic human need. The wonder and joy of experiencing activities of an aesthetic nature belong to everyone; communication of our emotions through the arts tells us much about our culture. It is by outward expression either graphically, dramatically, or intellectually that man internalizes the things he has experienced and heightens his understanding of things. Aesthetic activities add a rich dimension to a symbolic and abstracted world as he searches for order.

--Anne Quan Uno

Traditionally defined as "a study of art and the nature of beauty," aesthetics for the severely handicapped must be interpreted as multifaceted emotional experiences that involve all of the senses: sight, sound, smell, taste, touch, and kinesthesia. Anne Uno's beautiful book Aesthetic Activities for Handicapped Children offers many ideas for using the creative arts to develop aesthetic awareness.

This article is an attempt to apply some of Uno's ideas, as well as my own, to the severely and profoundly handicapped. When working with such persons, it is best not to fragment the creative arts into music, dance, drama, and art but to blend them together so that all of the child's sense modalities are stimulated simultaneously.

Music, for instance, is often approached through making sounds with rhythmic instruments. The young severely handicapped child may, however, drop a rattle which is put in his hand or try to eat a tambourine. Clearly background music with a strong percussive beat which elicits a desire to move is necessary. The child may initially move his entire body or "dance" to such background music rather than calling forth the fine muscle control required to manipulate rhythm instruments. Who can label such a creative arts session as either music or dance? It is obviously a combination.

Some children move more readily to words or chants than music. In this case the setting might be labeled dramatics since words usually elicit ideas. Orff-Schulwerk techniques seem to capitalize on these ideas with both chants and percussion instruments repetitively challenging to child to move. Creative dance classes for children have long used the idea of moving to familiar nursery rhymes as follows.

Movement to Nursery Rhymes

1. The children scatter and sit on the floor or stand with much space between them. They are told they can use all the space in the room but can not touch anyone else.
2. The teacher enthusiastically tells a nursery rhyme emphasizing the movement words told in the story. "Jack and Jill ran up the hill to fetch a pail of water. Jack fell down, etc."

The children should be encouraged to move according to what is being said. The teacher should go slow enough to allow the children time to create their story of movement. Some severely handicapped children are so frozen into immobility that the teacher may need to take their bodies and/or limbs and manually manipulate them through the expected movements over and over again.

Severely handicapped children also often have difficulty with abstractions, i.e., running up a hill when no hill exists in the flat surface of a floor or concrete play area; fetching a pail of water when no pail is in sight. The creative teacher will therefore try to have a dance lesson featuring Jack and Jill out of doors where a small hill can be found ideally near a water hydrant or stream of water. A bucket or pail should be readily available. Children must first be led through dancing realities before they can be guided into activities of pretending and coping with abstractions.

Other Creative Arts Activities Related to Nursery Rhymes

Art activities can be integrated into a Jack and Jill series of guided discovery sessions by having children use clay to build landscapes of level land with hills. Toy dolls, clothespin figures, or other objects can then be used to simulate running up the hill and falling down.

Pictures and three dimensional models of objects should be used to set the stage in creative arts activities. This visual aid assures that the child knows what the teacher is talking about. For instance, pail and many other words in nursery

rhymes and verse are old fashioned and probably not a part of the child's experience or vocabulary. Most of us say bucket. An institutionalized child may never have experienced filling a bucket and in such cases it might be better to say "to get a cup of water."

Whenever possible, it is good to involve the gustatory and olfactory senses. A session on Jack and Jill should certainly include tasting the water. Aerosol cans of spray or cologne or burning incense that smells like the out-of-doors would appropriately involve the severely handicapped child more intensely in the creative arts experience.

For severely handicapped children who seldom get out-of-doors the Jack and Jill session may be extended into nature study by asking such questions as what do you see when you go up the hill? Trees? Flowers? Bugs? Animals? Is the ground dry or wet? Hard or soft? Smooth and nice or full of sticker burrs? What is the sky like? Each of these questions can lead to pantomime and other drama forms. On a warm day without wind the dance/drama/music lesson may culminate in drawing, sketching, painting, or clay modeling the things one sees out-of-doors. Anne Uno's book offers many checklists of things children may be helped to see and feel when out-of-doors.

The resulting art products should be praised whether or not they seem to capture the essence of the session. It should be remembered that the major outcome in arts activities should be the experiences involved in doing rather than the quality of the end product. When there is doubt what the drawing is all about, the teacher may ask the child what it is and then, with seriousness and respect, print a title at the bottom along with the child's name. This fosters further communication when other staff members see the pictures on bulletin boards and walls and subsequently go to the child-artist and say, "I saw your drawing on hills and snakes yesterday." This then can serve as the basis for dialogue in a world where far too little conversational material exists.

Through such multisensory sessions which combine dance, music, drama, and art severely handicapped children can more nearly approximate the model of the creative individual described in this verse.

THE CREATIVE INDIVIDUAL:

is aware of the way things feel to the touch.
listens to the sounds of life around him.
has a sensitivity for the way things smell.
is aware of the taste of things.

likes to construct things in materials.
 prefers to rearrange old ideas into new
 relationships.
 is observant of the world about him.

 is sensitive to the beauty in man and
 nature.
 appreciates beauty that man has made.
 has a feeling for harmony and rhythm.
 likes to sing, dance, and write.

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SO MUCH PLEASURE FROM MERE TOUCH: ARTS

FOR THE VISUALLY HANDICAPPED

Sandra Ervin
Dallas Public Schools

I, who cannot see, find hundreds of things to interest me through mere touch. I feel the delicate symmetry of a leaf, I pass my hands lovingly about the smooth skin of a silver birch, or the rough shaggy bark of a pine. . . . If I can get so much pleasure from mere touch, how much more beauty must be revealed by sight.

--Helen Keller

Arts for the blind and visually handicapped have made great strides in the last decade. There was a time when only the ears of the blind brought pleasure, and music was the art most frequently cherished. Not until the mid 1800s did embossed books begin to appear so that the blind could enjoy literature by reading braille at their own leisure rather than having to listen to someone else read aloud.

Milestones in the national library program were reached in the 1930s with the establishment of a uniform system of English braille, the development of the talking book record, and the enactment of legislation providing for regional circulating libraries for the blind and the production of braille and talking book records. Recent expansion of the library program resulted from the passage in July 1966 of Public Law 89-522, which authorized the Library of Congress to extend its free books-for-the-blind program to people who are unable to read conventional print materials because of physical limitations.

More recently art galleries and museums have begun to make their services available to the blind and visually impaired. In 1966, the first permanent tactile gallery in the United States was opened. This was the Mary Duke Biddle Gallery at the North Carolina Museum of Art in Raleigh, North Carolina 27611. So successful was this gallery that the state legislature now supports it with an annual appropriation.

Another art facility for the blind is the Wadsworth Atheneum's Lions Gallery of the Senses in Hartford, Connecticut 06103. Originally conceived as a "touch-to-see" space for the unsighted, the facility opened in 1972 as the Tactile Gallery.

In 1974, the gallery's name was changed to reflect the importance of a multisensory approach and to acknowledge the support of the Lions Organization. Pat Mulcahy, the gallery's project coordinator, offers ideas for others interested in creating multisensory galleries:

As the program developed, it became apparent that sound is particularly important to unsighted people. Blind people do not simply touch or feel their way through life; rather, they achieve much of their sense of space and their orientation through sound.

Since most unsighted people have little exposure to art and art history, we felt that a broader, multisensory approach would be more effective. Unsighted people should be introduced to the vocabulary of space, form, and composition before they are assaulted by the chronology of art history.

In 1968, the Los Angeles County Department of Parks and Recreation began a traveling tactile exhibition of sculptures called Form in the Inner Eye. Ed Nice, Director of the Cultural Section, County of Los Angeles, Department of Parks and Recreation, 155 West Washington Blvd., Los Angeles, California 90015, makes these remarks concerning the effect on the artists and viewers:

Form in the Inner Eye challenged artists because they were forced to consider vibrations, smell, temperature, motion, and other stimuli in addition to the traditional visual criteria: rhythm, harmony, balance, and color which when considered alone prevent both artists and patrons from truly experiencing our environment.

By creating the tactile sculpture exhibit, the Department of Parks and Recreation encouraged both sighted and blind people to appreciate the environment that surrounds us. We believe that through a heightened awareness of feeling and touching, people learn more about physical art objects and learn ultimately that they too can be inwardly touched.

The most spectacular museum for the blind, as well as for other handicapped persons, is the new National Air and Space Museum of Smithsonian Institution in Washington, D. C. This is described as the most accessible cultural facility in the United States. Harold Snider, coordinator of programs for the handicapped at the Smithsonian National Air and Space Museum,

coordinated the planning of the facility with the National Federation of the Blind (NFB).

This organization, located at 218 Randolph Hotel Bldg., Fourth and Court Streets, Des Moines, Iowa 50309, makes available training materials for persons in museum work. It also provides services through its 700 chapters such as free consulting by members in areas that museums are trying to serve.

Actual involvement in the making of art products has been through vocational training. Once introduced to crafts, ceramics, and the other arts, visually handicapped persons often extend their skills during leisure time endeavors. Among the many textbooks used by art educators as a resource in teaching the blind is Victor Lowenfeld's book Creative and Mental Growth. In it appear illustrations of many sculptures and paintings done by persons with visual handicaps.

For many blind persons, however, the art form which offers the most pleasure is literature--reading it in braille or large print books, listening to talking books or cassette tapes, or even creating poems, stories, and other forms of literature of one's own.

The writer of this article, born with cataracts and legally blind, enjoys writing verse. The original poem which follows is about a visually impaired teenager with cerebral palsy. Considered retarded during his early years, he was not taught to read. Thanks to a dedicated teacher he is now learning to read and write. This one example shows that no matter what age or impairment a person might have, he/she deserves an opportunity to be involved in the arts. Literature is one form of art that enables a person to become aware of the world as it is now, as it might be in the future. There is also the world of fiction for those with vivid imaginations.

Through My Eyes

Although he may not see so well
Or stand up straight and tall:
He may not walk with an easy gait
Or run without a tumble or fall:

He may not speak with the purest of tone
Or pronounce words distinct or clear:
He may not read or write so well
Or try things without doubt or fear:

But there is one thing for sure
 He likes to try his best:
 Doing every task he is given
 And folks, that's the real true test.

--Sandra Gale Ervin

In order for the severely visually impaired to become involved in the world of art, many services are available to them in the United States and most of the fifty states individually.

I. Sources Available in the United States

A. American Foundation for the Blind

15 West 16th Street, New York, N. Y. 10011

Services provided by the Foundation are:

- (1) publication of books, magazines, monographs, and leaflets in conventional print, large type, recorded and (limited) braille format; (2) manufacturing and recording of talking books (books on records); and (3) improving and strengthening services for visually impaired persons throughout the United States.

B. American Printing House for the Blind

1839 Frankfort Avenue, Louisville, Kentucky 40206

Services provided by the Printing House for the Blind are: (1) reproduction of books for grades K-12 into large type, braille, talking books, and cassette tapes; (2) reproduction of sheet music and music books into large type or braille; and (3) manufacturing of all types of tangible apparatus.

C. Recordings for the Blind, Inc.

215 East 58th Street, New York, N. Y. 10022

Services provided by Recordings for the Blind are:

- (1) recording of textbooks for the college student primarily and (2) recording of books on reel to reel tape or on cassette tape.

D. The Library of Congress

Division for the Blind and Physically Handicapped, Washington, D. C. 20562

Due to the enactment of Public Law 89-522, the Library of Congress is able to offer its free books-for-loan program to the blind and physically handicapped. These books are housed in regional libraries throughout the United States.

- E. National Blindness Information Center
1346 Connecticut Avenue, N. W. Suite 212, Washington,
D. C. 20006
Call (toll free) 800-424-9770 for instant access
to technical information and consultants.
- F. Louis Braille Foundation for Blind Musicians, Inc.
112 East 19th Street, New York, N. Y. 10003
It is a national nonprofit organization providing
talented blind musicians with braille scores, scholar-
ship aid, auditions, evaluation, and counseling. It
also acts as an agent to obtain paid engagements for
musicians.
- G. The National Federation of the Blind
218 Randolph Hotel Building, Des Moines, Iowa 50309
A federation of state and local organizations
comprising blind people, NFB promotes legislation,
evaluates present programs, and offers technical
assistance to organizations interested in promoting
arts and public services for the blind.

II. Sources Available in Texas

- A. The Texas State Library
This library works in conjunction with the Library
of Congress in providing the housing of talking books,
large type books, and books on cassette tapes for free
loan to the visually impaired and/or physically handi-
capped. These books are primarily library books and
are sent and returned by free mail. In order to con-
tact the library, simply call their toll free number
(1-800-252-9605) for further information.
- B. State Commission for the Blind
Talking Book Machine Division, 2216 Rutland Drive,
Austin, Texas 78758
The State Commission for the Blind offers, for
loan, talking book machines (phonographs with variable
speeds), cassette players designed to play two speeds
and run four tracks, headphones, pillowphones, page
turners, and magnifying glasses. This equipment may
be used by those who qualify for this service until
their death.
- C. Tapings for the Blind
3001 Bookout, Dallas, Texas 75216
This agency provides books on reel to reel tape
and cassette tapes that are not available through the
sources listed above. Books are continuously being

published; thus it is impossible for the Library of Congress to keep up with this rapid pace. In most larger cities, an agency such as Tapings for the Blind exists to meet the immediate needs of its citizens.

Above are just a few of the many agencies and sources available to the visually impaired severely handicapped person. It is my hope that this information will prove profitable to someone in the near future.



Nonambulatory child too handicapped to move on his own dances as teacher whirls him around.

CREATING A CHILDREN'S THEATRE FOR THE DEAF

C. Warren Robertson
Texas Woman's University

Starting a children's theatre for the deaf at Texas Woman's University was such an excellent idea that I am surprised we did not undertake it sooner. In the first place it provided the Department of Speech with the opportunity of uniting its rather divergent forces by drawing on the skills of students and faculty both in the area of Communication Disorders as well as in the area of Theatre. Moreover, it provided us with an opportunity to use the theatre not just as an instrument of entertainment, but as a social tool, as a means of communicating with a very special audience: the hearing impaired.

Play selection at T.W.U. always presents difficulties since most plays have more roles for men than for women. We overcame this problem by selecting a fable, Fauquez's Reynard the Fox, that could be played by almost any combination of men or women. The play was an appropriate selection also in that it is designed to play to children rather than down to them and, in fact, provides thought provoking entertainment for adults as well as children. The play's unconventionality, its revelation of the problems of human hypocrisy and self aggrandizement, led some to wonder if the play could be understood by hearing impaired children. Our subsequent discussions with hearing and deaf children made it clear that they did in fact understand the play well with all of the children responding to the buffoonery and sight gags and with the subtler points being picked up by the more advanced audience members.

After casting the play we set about the business of learning how to sign the lines. Only two of the eight students associated with the production were in Deaf Education and only one of the students, Suzy Eyesnogle, was herself deaf, and so the task of learning the signs was monumental. As Mrs. Gladys Drake, our sign language consultant, later commented, it was like trying to learn a foreign language in six weeks. Fortunately our naivety in this area gave us the courage to plunge ahead. Ultimately, however, we were forced to confront the fact that our signing was not adequate and so we changed our strategy somewhat. We added Suzy to our cast of animal characters and had her introduce the play using both her voice and signs or "total communication" as we later heard this called. During the course of the action Suzy provided an ongoing commentary using signs and pantomime while most of the cast members signed only the key words of their speeches.

The decision to add Suzy to the cast was difficult for several reasons. First, we already had the problem of the audience's attention being split during portions of the play when a number of characters were on stage at the same time. This is a common shortcoming associated with amateur performances and I realized that adding a commentator would only compound the problem. Secondly, I did not want to give the actresses an excuse for not doing their best to learn their signs. In spite of these drawbacks, the decision to add Suzy to the cast turned out to be an excellent one, and perhaps proved to be the most practical and effective way for a cast of predominantly hearing actors to present a play to hearing impaired audiences.

We approached the problem of split focus in several ways. First, we attempted to minimize extraneous movement and eliminate movement by characters who at any given moment were not speaking. Although our objective in this respect was never perfectly fulfilled, we had at least hit upon a directing principle that would be important in future theatre for the deaf productions. A second way in which we minimized the split focus was by placing Suzy in an elevated position at upstage center rather than to one side. This minimized the distance that the eye had to travel in shifting attention from character to commentator. The final way in which the split focus problem was reduced was by having Suzy sign continuously rather than intermittently. This approach meant that the audience member did not need to see if she was signing, but only looked to see what she was signing. Each audience member was given a continuous choice with regard to where to look in order to receive maximal clarification. This approach seemed rather comfortable so long as the viewer was asked to choose between two points of focus rather than three or more possible focal points.

The advantage of adding Suzy to the cast, however, went far beyond her function of translating the play's words into signs. In a very real sense she fulfilled a choric function providing appropriate reactions, attitudes, and comments throughout the play. In discussing Greek drama critics have often noted the rhythm that is established as the audience's attention shifts back and forth between each dramatic episode and the danced choral stasimon which follows. Suzy's function was in some respects comparable to that of the Greek chorus except for the fact that her commentary was continuous rather than intermittent, a rhythmic quality, nevertheless, being established by the fact that our focus on her was intermittent. Moreover, her performance always had an organic, spontaneous quality comparable to a free-spirited dance. No two moments were ever exactly alike. In short, as the play progressed Suzy not only translated the actual lines but provided a subtext

which visually made statements such as "see how vain that character is," "isn't his sense of self importance absurd," "can you imagine someone being that stupid," "watch this and you'll see a funny trick," "wasn't that hilarious," "wasn't that sad," and so forth. The invention of the "choric translator" for the theatre for the deaf is suggestive of a new type of theatre with its own conventions and with focal control becoming the director's cardinal rule.

In retrospect it would seem that Suzy's remarkable mimetic abilities are not just the product of her unique personality, but are the studied result of dealing with her handicap. Deaf people everywhere have learned the art not just of using signs but of actually pantomiming intricate ideas and emotions. In studying Suzy's performance one is struck by the marked similarity between what she does and what a Marcel Marceau or a Red Skelton might do. Indeed, Suzy's techniques could be studied not only by those who might want to learn the art of mime, but by those who wish to improve their acting techniques in conventional theatre productions.

The techniques which Suzy employed as our "choric translator" included exact control of the body, arms, hands, and face. She also exhibited extraordinary flexibility and an uncanny ability to quickly display a gamut of emotions and ideas. There was also economy of movement, there being almost no gesture, posture, or expression that was not expressive of some particular thought. By comparison some actor's movements and gestures would appear exceedingly sloppy. Finally, Suzy displayed the ability to freeze for a moment with an expression or gesture so that the viewer had the opportunity to take a mental picture of the exact image being portrayed. This technique gave Suzy's performance crispness and clarity. Again, the whole idea was to reinforce verbal communication with visual signs and symbols. The Greek work theatron means "seeing place" and it was this aspect of our craft that we attempted to emphasize.

In spite of the great strength Suzy brought to Reynard the Fox we found ourselves in serious artistic difficulties during the week prior to our opening. Most of our actresses had had little theatre experience and, as a consequence, there was an inadequate sense of theatre discipline. I openly discussed my disappointment with the cast and they responded well with considerable extra effort during this final portion of rehearsals. Moreover, Mrs. Drake helped by coaching the students on their signs. I have since concluded, however, that the project demanded too much from the students for them not to receive some form of academic credit. Without considering the time spent in private study, our total amount of time consumed in rehearsal, on the road, and in performance came to over one

hundred hours--a figure that is competitive with the amount of time a student might devote to a three-hour college course.

In spite of the difficulties we had experienced, we were ready to take the play to the Waco Regional Day School for the Deaf for our opening on April 1. Brenda DeVore had completed our animal costumes, we had mastered our rather complicated make-up, and we had devised a simple set that could be carried in a small van. We were well received in Waco with the custodian helping us set up and Mr. Bill Davis showing my wife and me the facilities while the actresses got into their make-up and costumes.

Our reception by the children surpassed our greatest hopes. Although the play lasted for two hours, the children remained supremely attentive throughout. In fact, it was our observation that those audiences that held hearing as well as non-hearing children seemed more prone to being momentarily diverted from time to time. Perhaps the Waco children's attentiveness was due in part to their strong visual orientation, or perhaps it was due more to the careful supervision they received at that school. In any case, if a child's attentions seemed to wander away from a particular task the instructor would point to his own eyes with the index and middle fingers then sweep them out signing for the child to look in an appropriate direction.

Toward the close of the play Reynard saves the lives of his fellow animals by drawing the gunfire of the hunters--an event that the shrewd fox manages to survive. We had known that even the profoundly deaf were sensitive to vibrations, but were surprised, nevertheless, when Suzy and a number of the deaf in the audience were visibly startled by our gunshot sound effects. During rehearsal it had been extremely difficult for Suzy to correctly time pantomiming the rifle shots, but with the addition of the actual gunshot sounds, Suzy found it easy to time this particular effect.

In terms of her timing her other signs and pantomimic action, she had several cues to guide her. First, she knew the general blocking and action of the play quite well. Secondly, she is excellent at reading lips and, finally, she could accurately interpret what the other actresses in a less perfect sense were attempting to sign.

Following this first performance, the actresses ran out through the audience then remained in the lobby to communicate with the children. A marvelous emotion that told me "this is really worth doing" came over me as I watched the children and the cast gesturing, talking, and signing. The children interacted with all of the cast members but were especially attracted

to Suzy. They seemed amazed to discover that she too really was deaf and yet could speak and communicate with such skill.

The children made it a special point to sign their names and to tell us a little bit about themselves. The theatre project seemed especially worthwhile at this point as I realized that the play had exposed the children to new words and signs and that we were inspiring them to work even harder on their communication skills.

Two little boys at the school were intrigued by my beard and one of them could not resist touching it several times while the other boy danced about uttering a gleeful little "whoo-who" while pantomiming an elaborate ritual of shaving. Interestingly I had a similar experience the following week at the Fort Worth Regional Day School for the Deaf where a child felt compelled to touch my beard and then gave me an affectionate hug. My reaction was not just that the children needed loving care (which they seemed to be receiving), but that they also in many instances desperately needed a more perfect way of establishing meaningful human contacts. I felt that if the play opened the door of communication ever so slightly wider that our time had been well spent.

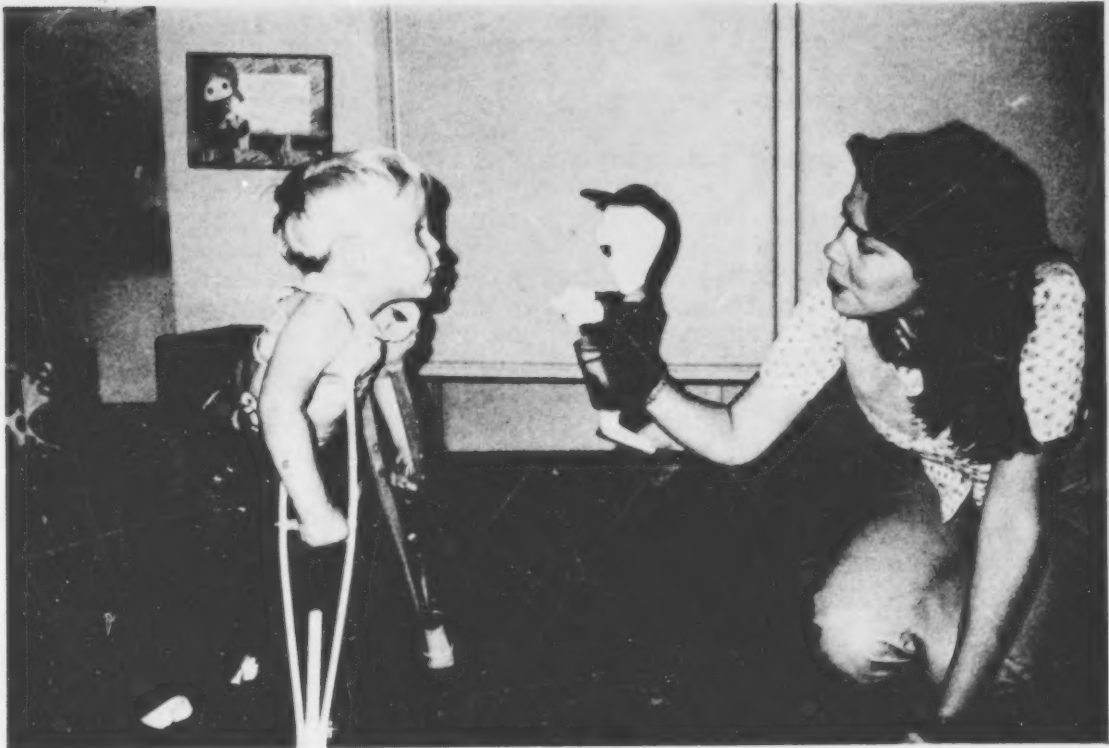
In our performances at the regional day schools for the deaf in Waco, Mesquite, and Fort Worth we experienced technical difficulties for which we will be better prepared in our future productions. In the first place most of the stages we played on were too small to accommodate all of our set pieces even though we had made a conscious effort to keep the scenery simple. We merely used what we could and eliminated the rest. Fortunately, we had rehearsed on three different stages at T.W.U. and had even held one of the dress rehearsals in a dormitory living room. This had given us experience in adjusting to playing areas of different sizes and shapes. We were not, however, prepared for the fact that the actresses could not cross unseen from one side of the stage to the other and this caused some awkwardness in our first performance. We did become skilled at smoothing over this problem, but for future productions we will plan all entrances so that they will be made from the side on which the actress has exited.

Additional technical problems included insufficient wing space, inadequate lighting, and the lack of dressing rooms. These problems can be alleviated in the future by our carrying additional simple equipment and supplies. Folding screens could be used to hide off stage characters that might otherwise be seen in the wings. We already own a portable lighting control unit which could be carried along for supplemental lighting. Finally, several mirrors could be purchased to facilitate

creating dressing rooms out of teacher's lounges, nurses' stations, and other such rooms that are commonly available at the schools.

Technical problems such as these, however, will remain as minor, almost inconsequential difficulties when compared with the larger issues of how to create a viable children's theatre for the deaf. A dedicated and long range pursuit of dactylology as well as the study of pantomime and an ever sharpening awareness of the principles of composition and focus should be at the heart of our developing a meaningful approach to this theatre genre. Mr. Davis put it succinctly in Waco when he stated, "we become very visual in our orientation."

Altogether Reynard the Fox was presented on five different occasions to a total of approximately 1,000 deaf, hard of hearing, and hearing children who seemed for the most part to immensely enjoy what they saw. It is hoped that this production will be remembered as the first step toward the creation of a successful and ongoing children's theatre for the deaf.



DRAMA FOR THE MENTALLY RETARDED

Randy Routon, Texas Woman's University
and
Michael Schneider, Garland Public Schools

Drama need not be only available for highly skilled actors or sophisticated audiences. The following is an account of how drama was used successfully as a therapeutic device with mentally retarded young men.

The men involved in putting on this play were residents of a community-based residential facility operated by a state school. Their ages ranged from 17 to 28 years and they had all spent most of their lives in an institution. Their present situation was an attempt to mainstream them into the community in a sheltered environment, thereby teaching them the skills necessary to live independently or semi-independently in a community setting.

The concepts of normalization, mainstreaming, and deinstitutionalization were the guiding principles in the formation of educational and recreational activities for the men. Included in the recreation program were activities that stressed the use of community resources and activities which were appropriate for the men's future lifestyle in a halfway house. A consideration of that lifestyle had to include maximum functioning potential, economical aspects, and the needs and desires of the men. Fishing, swimming, skating, baseball, using the local library, shopping, jogging, cooking, going to movies, picnics, hikes, weight-lifting, basketball, and dating were all part of the recreation programming. The possibility of dating was the inspiration for the dramatization.

Approximately one year after the men had moved into the community, 20 mentally retarded women from the same state school became community residents. Although by this time the men's level of sophistication had greatly increased beyond that of the women, the men were very pleased with the possibilities that the future held. They asked the recreation leader if they could do something special for the "girls."

Notice was given that a general meeting would be held to discuss what they wanted to do. All of the suggestions were voted on and the decision to do a play and the date were made. A committee was selected to write the play, with the recreation leader appointed to serve as consultant and secretary. An attempt was made to keep the plot and lines simple and direct.

A theme was chosen (western), a title (Gunsmoke), and a plot (which had to do with a poker game, cheating, good guys, bad guys, a shoot-out, an escape, the sheriff and somebody gets arrested, mistaken identity, an Indian that just says "How!" and the arrest of the bad guys).

The plot was broken up into three acts and the number of actors needed discerned. A second general meeting was held to present the results of the writing committee and to give the potential actors a chance to volunteer for the part of their choice. Houseparents and volunteers were assigned to help the actors come up with an appropriate costume. Emphasis was placed on helping the actors decide rather than making choices for them.

Other men were asked to help with the scenery and arrangement of the auditorium. The scenery was made with cardboard boxes that had held refrigerators and washing machines. The boxes were cut and unfolded and nailed to wooden stands. The wooden stands were 1 X 2, 1 X 4, and 2 X 4 pieces of scrap lumber. The cardboard background was then painted with one resembling the inside of a saloon and the other resembling the inside of a log cabin. The men did the sawing and nailing in the afternoons after their classes. Painting was done in the evening so they would have time to change into some old clothes.

While all of the above work was going on, volunteers were spending time with the actors in each scene going over their lines. The sequence of action was stressed more than the actual lines given. Additional volunteers worked with men making posters advertising the play and writing special invitations for those the men especially wanted to come. Advertisements were placed at the men's and women's dorms at the institution where they had previously resided and at the nearby university.

The appointed night came and all the actors were ready. They were anxious to have make-up put on and get into their costumes. Approximately 60 persons attended, some of whom were teachers, parents, friends, past and present houseparents, university students, and the women who had just moved into the community.

A prompter was standing in the wings to help with forgotten lines, and a backstage manager was there to make sure everyone was on stage on time with his guns and cowboy hat in place. One of the men wrote and gave an opening which welcomed the audience and noted the play was in honor of the women.

The play lasted 15 minutes; the applause and bows lasted at least 10. A reception was held for all of the participants and they were each told several times what a good job they had done.

We felt there were several reasons for picking this type of activity. First, the mentally retarded client rarely gets the opportunity to show off his talents in a mode that results in positive feedback. Because this was scheduled as a public showing, we felt it could be a great ego booster for the men. The second reason was to allow the men to have the opportunity to be a part of the decision making process. The unfortunately little amount of control that they have over their lives must give them no small feeling of insignificance. In this play, they decided on the plot, wrote the lines, determined what the scenery should look like, gave the play a name, invited who they wanted, and arranged the chairs in the audience.

Another important aspect of this activity was that it taught the men that fun does not have to be something you buy. For no money involved, they were able to give something to someone whom they wanted to please. In doing so, they received as much themselves.

A later play was presented on another theme by the same men. One of them borrowed a movie camera and filmed parts of it. This proved to be a valuable asset. It allowed not only for the reviewing of the play, but provided unmeasurable feedback to the retarded clients that they look and act like a "normal" person. A videotape would be even more functional because it allows for instant playback and the film can be used over and over.

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ORFF-SCHULWERK: AN ADAPTATION FOR DRAMA

FOR RETARDED PARTICIPANTS

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The Orff-Schulwerk process offers endless possibilities for adaptation to specialty areas. In its original form the Orff-Schulwerk method was designed as an elemental approach to music and rhythm for the schoolroom. Since its original introduction into the German school system, its simple open-ended structure has been understood by many who, having tried and experienced the process, know and believe its creative potential for learning and living.

Orff-Schulwerk has been individually adapted to many specialties. It has been used by music therapists, dance therapists, speech therapists, and even by swimming instructors. It has been used in therapeutic, clinical, and recreational settings as well as in traditional educational institutions.

Because it is a basic elemental process, it can be adapted to nearly every setting. Its basic assumptions and method have been used by some who have never heard of Orff-Schulwerk. Many assumptions of Orff-Schulwerk are implicit in creative dramatics and improvisational theater. Although specifically designed for children between the ages of five and twelve, creative dramatics has proven very effective with mentally retarded teens and adults.

Creative dramatics may be defined as group experience in which each individual is guided to express himself for the joy of creating improvised drama as he works and plays with others. Creative dramatics emphasizes participation rather than product. The chief aim is experience--experience that fosters child growth and development, reveals needs, encourages growth of individual spirit in the presence of a group, and provides for self-realization and cooperation in an atmosphere of spirited group play. In addition, it has the potential to increase imagination, help increase verbalization, develop better

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listening skills, improve recall, help develop a sequential understanding of events, and give a healthy release of emotions.

Improvisation might be called creative dramatics for adults. Like creative dramatics, improvisation uses improvised dialogue and movement in creating scenes. Many of its theater games and exercises can be effectively adapted to the Orff format. Like Orff-Schulwerk, creative dramatics and improvisation emphasize learning through experience and are based on the assumptions that everyone can act, everyone can improvise, and everyone has creative potential.

Viola Spohlin, whose book Improvisation for the Theater has much to offer for anyone working in drama, states in her beginning chapter,

We learn through experience and experiencing, and no one teaches anyone anything. This is as true for the infant moving from kicking to crawling to walking, as it is for the scientist with his equations. If the environment permits it, anyone can learn whatever he chooses to learn, and if the individual permits it, the environment will teach him everything it has to teach. Talent or lack of talent have little to do with it.

Drama, like music, can be a medium for experiencing fundamental and universal truths in living--both can be comfortably adapted to the Orff-Schulwerk process. Orff-Schulwerk starts with a germ idea and takes it through four processes:

Improvisation	Fulfillment
Selectivity	Closure

The germ idea can be as simple as a word or as complex as a story. In either case, the above procedural outline can be followed.

Applications to the Concept of Fire

An often used example of a one word germ idea for Orff-Schulwerk is fire. Carol Bitcon gives an example of its development in an article entitled, "I Am!" presented at the 4th National Symposium on Creative Communication, Orff-Schulwerk in 1969. Given more of a dramatic emphasis, the same germ idea went through the following development at the Recreation Center for the Handicapped in San Francisco.

The Day Trippers, a group of approximately 25 moderately retarded adults, had been studying insects as their theme for the month. The day before the program, there had been a big fire in San Francisco. At the beginning of the hour this event was mentioned and participants were asked if any had seen or heard about it. Several claimed they had, so a discussion was launched on how fires start. A pantomime fire was built in the middle of the circle, emphasizing the care that had to be taken not to get too close. This evolved into a chant:

If you get too close
You can burn your pants;
If you burn your pants
It'll make you dance.

To the varying beat of a drum, each participant had a chance to do a fire dance around the imaginary fire. After every participant had a turn, it was suggested as a closure that the fire be put out. The group, as was suggested in Bitcon's experience, tightly encircled the imaginary red crepe paper flames, and blew them out. During the process of the fire dance, several participants got burned. In addition to warnings and cries of sympathy that occurred when this happened, the leader produced a white smock and a stethoscope and asked if a doctor was in the house. Using the props, one of the participants checked the severity of the burns before the chant continued.

After completing the fire dance, the theme of fire was continued and the leader asked if anyone had ever heard of an insect whose house had caught fire. It took little effort to elicit this story and rhyme:

Lady bug, lady bug
Fly away home,
Your house is on fire
And your children are alone.

In the remainder of the session, a story was developed, based on answers given by participants to the leader's questions: How did the fire start? Why was Lady Bug out of the house? How was the fire put out? With some selectivity by the leader, the fire turned out to have been started by a firefly arsonist who threw a fire bomb into the house after making a call to Mr. and Mrs. Ladybug on a prop telephone, claiming he was a neighbor inviting them over. After the fire was started, all nonacting participants chanted the Lady Bug rhyme which sent the parents hurrying home where they saved their children and called the fire department. The firemen called the police and captured the fire bug and hauled him off to jail. Positive reinforcement was given to all for

sincere portrayals and the session concluded with a good feeling of accomplishment. They went through the process of improvisation in dealing with the familiar concept of fire. With the help of the leader they are co-authors to the selectivity of the most appropriate suggestions to build a story. By acting it out, they went through the fulfillment and natural closure of a finished creative product.

Depending on the ability of a group, the above described program would be simplified for more severely retarded, or expanded by eliciting suggestions from participants as to how the story could be improved. Through positive criticism, the story could be further embellished and actually performed for an audience.

Application to Newspaper Awareness

Orff-Schulwerk adapted for drama does not always need to evolve into playing out a story.

Another familiar Orff chant is:

Extra! Extra!
Read all about it!
What is your news?
What is your news?

This would be followed by:

Newspaper! Newspaper!
On the bench,
Bet you can get it,
It's a cinch!

To use this chant a scene must be set. It is a beautiful day in the park. You have just bought a newspaper and have sat down to read it. Another person enters (from the circle) and assumes a character who has reason for wanting the paper. Using this basic dramatic objective, the new person attempts to get the newspaper.

After this scene and explaining the game, the leader or another model sits on what has been set up as a bench in the middle of the circle and starts to read a real newspaper.

The chant is said by the group and any participant who wishes to start can do so. The leader offers some resistance to giving up the newspaper until the argument is sufficiently convincing. He then gives the new person the paper and leaves. The chant is repeated and the game continues as a relay around

the circle. As a closure, the newspaper can be creatively destroyed.

Application to Modes of Travel

An improvisation game which can be effectively adapted to the Orff-Schulwerk method is called the Concerto. Although there are many variations of this theater game, it has been most effective with handicapped participants when combined with a pantomime game. The leader prepares a grab bag before the session which might have pictures of various means of transportation. A chant like the following can be used:

There are other ways to travel
Than going for a walk.
Show us what you find
But--don't talk!

Everyone in the group takes a turn reaching into the bag and tries to act out the mode of transportation he picks. Each is allowed to make one sound. After everyone has had a turn the entire group assembles in choir formation with the leader as the conductor. When pointed to, each participant, as if he were a musician in an orchestra, delivers his sound. The conductor cuts each off or allows him to continue according to his own sense of sound and rhythm. Juxtaposing varying sounds and by combining several or all of his instruments the conductor speeds up or slows down the sound piece at his whim, builds to a fitting climax, ends the piece, and takes a bow. An interesting variation of this concerto is an emotional concerto. In this game emotional sounds are used as instruments and the same procedure followed. The game also can allow participants to take turns as conductor.

Whether music or drama is the media to which Orff-Schulwerk is adapted, emphasis is on creativity. Creativity occurs when inquiry is encouraged. Creativity is the ability to form new relationships, meanings, and products by reassembling experiences and knowledge. The Orff-Schulwerk process of expanding a germ idea through phases of development, exploration, and closure can be viewed as a microcosmic example of the expansion of our entire being. When we are not expanding we are either stagnant or contracting. Too often education, especially for mentally retarded children, stresses setting limitations rather than creative expansion. Orff-Schulwerk method, in any of its adapted forms, deserves more attention from educators in this country. Through its creative process joy, which should be a part of all learning, can be attainable for all.

Editor's Note:

Orff-Schulwerk is discussed further by the Cheyettes, Teaching Music Creatively, New York, McGraw-Hill Book Company, 1969. They indicate that the English adaptation of Orff's work with a teacher's manual was prepared by Doreen Hall and Arnold Walter. The Cheyettes define Orff-Schulwerk as "the active involvement of children in singing, rhythmic movement, and the playing of rhythmic melodic percussion instruments." The instruments employed in the Orff system include small tympani, triangle, cymbals, wood blocks, jingles, rattles, tambourine, bass drum, and small drums; and melodic percussion of soprano and alto glockenspiel, soprano and alto metalophone (a heavier type of bells); soprano, alto, and bass xylophones; a bass two-string instrument called a bordun, which may be played pizzicato, struck with a soft mallet, or bowed; a viola da gamba of six strings played pizzicato; and water-tuned musical glasses played with a hard mallet.

Orff-Schulwerk instruments can be ordered through Orff-Schulwerk Instrumentarium, Music for Children, U. S. Agents, Magnamusic-Baton, Inc., 639¹/₄ Delmar Blvd., St. Louis, Missouri 63130, or Magnamusic Distributors, Inc., Sharon, Connecticut 06069.



CREATIVE USES OF THE STUFF BOX

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As soon as the "normal" child learns to pull up, crawl and walk, she/he is into everything within reach. Normal children explore their home environment by crawling into clothes closets, kitchen cabinets, reaching for items on tables, dressers, and anything that catches their eye. They are curious about everything they see and touch. Those of us who have observed children know that they handle these objects, beat on them, put them in their mouths, and literally explore and investigate any object.

Children learn that Dad's shoes are big and theirs are small by putting their feet inside them. They learn different textures by putting their hands in their food and touching everything else they can find. They learn to associate odors with items they find in various areas of the house: dirty clothes, newly baked bread, and wood shavings around Dad's work bench. They learn visual cues such as colors and facial expressions through this same method of observation and exploration, as well as verbal cues, because family members constantly reinforce what they are doing through positive or negative responses. They learn many concepts through this type of play such as hard and soft, big and little, hot and cold, shapes, etc.

The Toy Box in Normal Growth and Development

As children get older their parents find many discarded items in their toy boxes, such as bright colored yarn, wooden spoons, margarine tubs, measuring spoons, and boxes. These items are their favorite toys because they can create all kinds of "things" with them, then tear them apart and reassemble them without fear of destroying an original toy. The toy box always contains something new that Mother, Dad, Brother, or Sister has discarded, such as old shoes, milk cartons, scraps of material, shirts, and necklaces. So the treasures in the toy box continue to change being constantly filled with stimulating and interesting items.

Sensory and Motoric Deprivation of Handicapped Children

Severely handicapped children because of their handicaps do not explore, investigate, and experiment in the same manner. As a group, they are many times denied this early form of exploration. They may not be stimulated visually because of lack of vision, may not crawl around and get into things because of lack of mobility. Intellectually they may not have reached that stage of curiosity that their "normal" peers have obtained. Parents of handicapped children may be overprotective and not allow or encourage this type of exploration because of a fear that their children might hurt themselves.

In other situations, professionals who work with these children are so concerned about the children's physical development, toileting, feeding, and being able to dress themselves that they do not give priority to creative exploration. Therefore, when the severely handicapped child does enter a habilitation or educational program, she/he is not only at a disadvantage with his/her peers because of lack of normal vision, mobility, and intellectual functioning, but also because of his/her lack of exploration, investigation, and experimentation with this type of random-like play. Yet it is through this form of exploration that children learn about objects and their relationship to the environment.

Use of the Stuff Box to Overcome Deprivation

Special and elementary education teachers, therapeutic recreators, and other specialists working with severely handicapped can provide the child opportunities for overcoming these disadvantages with the use of a "stuff box." A stuff box may be thought of as a "treasured" toy box: that box where items are collected and stored, items that the owner (the child) can use to assemble and disassemble projects according to the wishes of the creator. Through the use of a stuff box, the severely handicapped child can have unique play experiences that she/he may have been denied before. A stuff box, then, contains many discarded treasures usually collected by the "normal" child such as old clothing, egg cartons, empty cans, boxes, milk cartons, and plastic containers. (See list at end of article for a more extensive listing.)

For the handicapped child who is denied the normal acquisitions of such items, someone has to start collecting the items for a stuff box and teach him/her how to use it. Through the manipulation, exploration, and experimentation of the contents in the stuff box, the severely handicapped child develops basic skills such as the recognition of shapes and sizes, colors, being creative, and expanding communication skills.

As with normal children, the objects in the stuff box change as the child matures. But no matter what items may be included in the stuff box, they will lend themselves to multiple uses in the areas of the creative arts, while providing the severely handicapped with instant gratification and success. From the stuff box the child can create his own project without having to adhere to any set pattern, having the freedom to disassemble and reassemble without fear or punishment.

The Stuff Box as a Lead-up Activity to Rhythm and Music

In the structured environment of the classroom and/or rehabilitation setting, the stuff box becomes the focus and resource for expanding the learning experiences under the guidance of the teacher/rehabilitation specialist. The child learns to recognize materials that she/he comes into contact with everyday. As an example, teacher/therapist might say, "This is a milk carton that once contained milk, like you have for lunch, smell it, feel it, look at it. Now we are going to make a noise maker (musical instrument) using the carton."

Then the teacher/therapist lets the youngsters explore the various ways of creating a noise using the carton. Depending on the age level and severity of the handicap, the teacher might provide examples of a noise maker, such as beating on it with one's hand or with a stick, putting rocks or buttons inside and shaking it, or putting rubber bands around it and "plunking" them like a guitar. Again because of the variety of the contents of the stuff box, the noise maker or musical instrument can be as simple or complex as the child's needs and ability level dictates. Other examples suggest tubes that become kazoos, cigar boxes as guitars, aluminum pans as cymbals, oatmeal boxes as drums, and plastic bottles that become rattles. In addition to making the instrument, the child can decorate it and then use it in a music or rhythm class.

The Stuff Box in Puppetry and Creative Dramatics

Not only is the stuff box an effective tool for introducing sounds and rhythms, but it can also be used for developing communication skills such as in drama. The arena of the "stage" provides an individual with an environment where the handicapped child can use inventive techniques to obtain the effect needed to communicate. As an example, the child with a speech problem may use visual verbal clues by attaching a sign with words onto a puppet that is "acting." A blind child may learn "what is a smile?" when affixing a felt cloth smile to the face of a puppet.

The teacher may begin with the simplest type of puppet by having the child glue a paper plate to a popsicle stick, tongue depressor, or paper tube and then make a face on it with finger paints, brush paints, gluing construction paper, felt, or yarn on it. The three dimensional face is best for the blind child because she/he can "see" the face. From this point the child can act out a story as the teacher reads, spontaneously act a story she/he is familiar with, or write an original play. The teacher can make these children aware of many other types of puppets that can be made from the stuff box, such as paper bags, sacks, wooden spoons, paper cups, and/or fabric. Such drama projects provide stimulus for the child to explore, create, and communicate with others because with puppets one is not restricted to just verbal communication.

After exploring the entire area of puppetry the teacher can then advance to a more complex level of role playing by letting the children come up with costumes and props from the stuff box to present various stories or ideas to their peer group. The children have access to old clothing for costumes as well as many articles for creating masks, animal costumes, and other apparel which gives them the opportunity to "dress up." In this way the "treasured toy box," where objects were collected and stored, now becomes a resource for "creating a person or animal." A person or animal has its own personality which allows the child to act out different roles that support their efforts to communicate. In developing drama in this manner the severely handicapped child is encouraged to communicate and express emotions in whatever manner she/he is comfortable without fear of being ridiculed. This vehicle of expression provides a variety of opportunities for the child to utilize his/her abilities since the disability is no longer important because the role becomes the focus for attention.

The Stuff Box as Motivation for Movement Exploration

The stuff box provides another opportunity to explore movement. Movement is defined as the ability of one to explore one's own space. Children ask, "How tall am I? How small am I? How wide am I?" One technique is to use various sizes of cans to introduce these concepts. A child can compare a soup can (tall) with a can of mushrooms (small). How wide an object may be can be determined by a can of coffee (wide) compared with a can of tomato paste (narrow). This exploration allows the child to compare "space" relative to the size of cans found in the home.

The Stuff Box as a Source of Arts
and Crafts Activities

The same items in the stuff box used in music and drama can be used as items for crafts. One of the more creative areas in the arts is in the creation of craft items. Crafts provide the handicapped child opportunity to explore and experiment with forms because she/he is not limited to those stereotyped crafts that decorate walls and shelves and themselves. As with normal children, they can also make their own toys. They can make building blocks, cars, airplanes, pull toys, shadow boxes, doll furniture, pin wheels, dolls, as examples. All these toys are a part of themselves, their own creativity. The teacher can help them explore all of these kinds of toys and they can learn why wheels go around and what makes something balance.

The stuff box can also be used for creating crafts such as spool dolls, paper weights, plaques, napkin rings, recipe holders, pins, bracelets, tote bags, "sit upons," etc. Crafts such as these provide the children with the opportunity to be creative and explore their abilities to produce a product as well as the opportunity to make a present for someone in their family or for themselves.

Normal children have a variety of opportunities to create a special gift for a member of the family or to shop for a family present. Severely handicapped children do not usually have this opportunity to shop for a special gift for a birthday using their own allowance. These children rarely have the freedom to go from store to store looking for a special gift for a family member. Yet they are aware of the process used by normal children in their selection of a special gift which enhances their feeling of being part of the family.

With the stuff box they can make a special gift which is important to their feeling of self worth and acceptance in the family. One can be assured that their gift is greatly appreciated by the parent, especially when the child has made it themselves. Because teachers/therapists may become more concerned with the appearance of the final product, as measured by conventional standards, they may provide more help than is necessary. But the product becomes one of the teacher's creation, not the child's, and the child knows that. One of the nicest things to hear and see is a severely handicapped child hand his/her mother a paper weight and say, "I made it all by myself!" It might not look like a finished product one might find created by the normal child, but to the child and parent it is special because the handicapped child had the opportunity to express herself/himself and learn to do something on his own.

Home Learnings With the Stuff Box

Because of the versatility of the stuff box and the potential it has for providing the handicapped child with the same learning opportunities as the normal child, this tool should not just be used at the school, recreation center, or rehabilitation center alone, but it should also be used at home. The teacher or therapist can help the parent understand the value of the stuff box and how their children can learn from its use. Once a handicapped child has learned some of the things that can be done with a stuff box in the educational/rehabilitation setting, the freedom to explore these "treasures" as a learning tool should be continued at home. Not only would this help parents to understand the importance of treating their handicapped child the same as normal children, but they would realize they don't have to buy expensive equipment and toys for their "special" child.

Both parents and children should be encouraged to explore, experiment, and investigate their own stuff box, because through this type of play experience, they both learn. A stuff box will also provide the handicapped child other explorative outlets that are missing from watching TV at home. As an example, the teacher could request the handicapped child make a project for school from his/her stuff box at home. This assignment can provide the stimulus for the youngsters to use their home stuff box and assist the family in becoming more aware of its potential.

Another area of interest involves growing "things." The handicapped child can learn about plants and how they grow by saving the seeds from oranges, apples, and avocados, planting them in egg cartons and watching them sprout. Through these resources from the stuff box, they learn about life and the responsibility of caring for something alive.

In preparing a stuff box at the school/rehabilitation setting, parents should be encouraged to provide items for it. Parents involved in this way get into the habit of thinking about the potential of an article before it is discarded. Also parents become involved in the program, even if only superficially, without being concerned with expense. Further, teachers/therapists should not limit themselves to the suggested list of items noted in this article. The teacher/therapist is only limited by his/her creativity for developing this technique for learning since the author has simply scratched the surface for the potential uses and contents of the stuff box.

Normalization Contributions of the Stuff Box

If one of the primary concerns in working with severely handicapped children is "normalization," then the concern that they be exposed to the same type of development as "normal" children is an essential part of the learning process. The normal child does learn through exploration, experimentation, and manipulation of objects while crawling around the house, while the severely handicapped child rarely participates in this type of play at the infant age. It is therefore important for specialists in the therapeutic field to create these exploratory opportunities. By providing these stimuli, the teacher/therapist accelerates the learning experiences of the handicapped child thereby "closing the gap" between the child and his/her peers.

This stuff box is a unique and invaluable tool in providing these types of experiences in the areas of creative arts. It can provide them with a well rounded program of drama, music, movement exploration, crafts, and games. The box becomes a major vehicle for creative expression, developing awareness of the world around them, communication skills, basic concepts, and exploration of their own abilities. It gives handicapped children the same opportunities experienced by their normal peers, thus gradually diminishing one area in which they are disadvantaged with the norm. As a Recreational Therapist, this author has used this tool (stuff box) for several years and has found it to be one of the better methods for working with severely handicapped children. It works!

Possible Contents of a Stuff Box

Egg cartons	Popsicle sticks
Paper towel rolls/tissue rolls	Glass jars
Milk cartons	String
Empty thread spools	Pencils
Scraps of fabric and yarn	Paper plates
Aluminum pans	Rocks
Magazines and greeting cards	Juice cans, other cans
Margarine tubs	Buttons
Oatmeal boxes	Bottle caps
Styrofoam food trays	Paper cups
Shoe boxes	Plastic forks/spoons
Boxes--berry, cigar	Corks
Plastic bottles and containers	Cookie cutters
Large and small paper bags	Sponges
Old jewelry	Wooden spoons
Newspapers	Sieves
Coathangers	Funnels
Old nylons	Flour sifters

Construction paper
 Straws
 Crayolas
 Old clothes, socks, dresses,
 hats, shoes, shirts

Nuts and bolts
 Soap pieces
 Clothes pins
 Plastic lids

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REALISM IN PERMITTING THE PROFOUNDLY RETARDED CITIZEN

HIS RIGHT TO CREATIVE ARTS EXPRESSION

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Meeting the creative arts needs of profoundly and severely mentally retarded persons is not always easy. Although some respond voluntarily to invitations to participate in creative arts activities, others remain totally inactive unless their body parts are first taken through the desired motions. Almost all severely handicapped persons require some modeling, or demonstration, in order to make socially expected responses to creative arts materials.

Presented in this article in column format are some of the common behaviors exhibited by profoundly and severely retarded persons in the creative arts setting. It should be noted that profoundly retarded persons are generally so labeled because they function five standard deviations below the norm. Their intelligence quotients usually fall below 20 and many do not develop expressive language. On the other hand, severely retarded persons are so classified because they demonstrate intelligence quotients of 20-39; they usually develop some language and can be trained to care for their bodily needs. Only about 5 percent of all mentally retarded persons fall into the severe and profound ranges, and tremendous individual differences exist within these groups. Some, generally called idiot savants, have been known to exhibit gifted behavior in one of the arts. Illustrative of these is Shyoichiro Yamamara whose atypical talent in drawing animal and insect pictures is described, along with illustrations, in a recent journal (Morishima and Brown, 1977).

The responses described now are those which can be expected during the first sessions or exposures to the arts. These behaviors can be changed! Often, however, modification of behaviors involves one-to-one relationships, and the teacher or therapeutic recreation specialist in a residential facility is scheduled for 10-30 such clients at one time. The need for volunteers to help bring arts to the handicapped is overwhelming.

Clay ActivitiesProfoundly Retarded
Initial Responses

Places in mouth, chews, and swallows
 Involves it in established manner
 Drops and deliberately steps on it
 Ignores it
 Rejects feel of it on the skin
 Wipes hands on self or therapist
 Throws across room in frustration

Severely Retarded
Initial Responses

Rolls in fingers
 Sticks it on table
 Places it in mouth or licks it
 Uses it as a ball
 Places objects in it
 Rejects feel of it on the hands
 Wipes clay on self or therapist

Begin with each profound person's individual response, helping him to tolerate the new texture and temperature. Be prepared in case the client tries to eat the clay. Keep a dowel or other sturdy object at hand to place between the teeth while cleaning out the mouth with fingers or wash cloth. Use earth type clay rather than plastic as it passes through the digestive system with greater ease and has no chemicals to harm the body.

Finger PaintingProfoundly Retarded
Initial Responses

Violently rejects feel of paint on skin
 Places paint in mouth and swallows
 Smears over entire body and area
 Shows definite color preference
 May prefer using brush instead of fingers

Severely Retarded
Initial Responses

Withdraws from feel of paint on skin
 Licks fingers experimentally
 Smears primarily on objects
 Deliberately smears on paper
 Enjoys making own hand and foot print
 Shows definite color preference

Place paint on floor in center of large sheet. Lead student through paint bare foot first and then permit him to make tracks on a sheet. Do not wash feet until the session is through. Following the footprints session place the hands in the paint and make hand prints on the floor or a sheet. Then stand in front of a mirror and brush or rub paint on the face

like make-up. If intolerance is too great, place the student in front of mirror and paint on his shirt or paint on a towel which has been hung around the neck. Encourage the student to begin to make his own movement independent of the teacher or recreator.

Tissue Paper Art

Profoundly Retarded Initial Responses

May be frightened of large sheets
Places paper in mouth and tears it
Chews small pieces and swallows
Makes no connection between glue and paper
Squeezes glue at random in any amount
Places glue in mouth

Severely Retarded Initial Responses

May be frightened of large sheets
Tears it with hands or hands and mouth
Chews as if it were gum
Makes no connection between glue and paper
Shows no concept of amount of glue needed
Licks glue

First teach the concept of squeezing a glue bottle. Begin with smaller pieces of paper and permit the client to take any amount to place in whatever glue is on the paper. Separate piles of tissue paper by colors and permit him to mix them in any way he desires. Use both bright and dark colors. White glue may be colored with cake coloring or tempera to produce a modeled or solid color. Display all work.

Building From Rocks and Other Natural Materials

Profoundly Retarded Initial Responses

Enjoys picking up bricks or rocks
Piles two or three
Uses materials within reach and vision
Seems not to care when structure falls

Severely Retarded Initial Responses

Enjoys building structures
Piles large numbers
Searches small area for materials
Shows frustration if structure falls

Leader must interact with client and/or build a model as an example. This activity is most successful out-of-doors. Leader may reinforce building with sticks, strings, etc., to provide variety. Encourage use of heavy objects to increase physical movement of the body.

DrawingProfoundly Retarded
Initial Responses

Breaks colors and pencils
Places colors and pencils
in mouth
Chews and swallows colors
and pencils
Marks randomly on all
objects

Severely Retarded
Initial Responses

Breaks colors and pencils
Places colors and pencils
in mouth
Marks randomly on objects
Confines marks to large
paper

Use felt tip, water color pens for drawing. These are less easily eaten than crayons and nontoxic. Colors are brighter and the large pens are easily gripped. Attachments for the physically handicapped are available. Do not expect the marks to be confined to an eight by eleven inch piece of paper. Refer to Creative and Mental Growth by Lowenfeld for teaching progressions, beginning with scribbling.

Dramatic ActivitiesProfoundly Retarded
Initial Responses

Lacks expressive language but
can use noises and gestures
Does not reproduce situations
deliberately
Willing to be led through
skits
Enjoys the attention
Spontaneously acts out
situations
Enjoys prop type parts in
plays

Severely Retarded
Initial Responses

Uses about 300 words
effectively
Acts out situations on
request
May not comprehend the
reproduction
Acts out familiar situations
spontaneously
Prefers active parts and
usually acts freely

Give student a part which coincides with his personality. Do not restrict his response to the part. Pantomime and gesture are generally more successful than speaking parts. Many nonverbal persons can learn and use signing. Orff-Schulwerk techniques are excellent.

Listening to Music

Profoundly Retarded
Initial Responses

Makes definite response to
sound and vibration
Tends to move body parts
Increases output in all
movement activity
Loud music may produce
frustration
Fast music may produce
hyperactivity
Slow music may quiet client
Shows definite pattern
responses

Severely Retarded
Initial Responses

Makes definite responses to
sound and vibration
Tends to move body parts in
rhythms
Increases output in all
movement activity
Loud music may produce
frustration
Fast music may produce
hyperactivity
Slow music may quiet client
May copy response of others
around him

Music is useful in any activity either to reduce or heighten response. The type of music must be fitted to the individual student and to the activity. Music for the sake of music will heighten the student's awareness of sound, vibration, and intensity.

Producing Sounds: Rhythm Instruments

Profoundly Retarded
Initial Responses

Ignores instrument placed in
hand
Bangs objects together
Uses rhythm instruments on any
body part
Chews rhythm instruments
Hums or uses noises to copy
records
May produce own tunes

Severely Retarded
Initial Responses

Bangs objects together
Uses rhythm instruments
correctly
Chews rhythm instruments
Hums or uses words to copy
records
May produce own tunes

Physically handicapped may use special adaptations to attach the rhythm instruments to body parts. Care must be taken that the student does not hurt his teeth or mouth by chewing on wooden instruments. Humming should be encouraged by the leader. This may be done while walking, swimming, or during any activity except running. For example, a bar of a familiar tune may be sung followed by a jump at the end.

Individual Differences Must Be Respected

Although profoundly mentally retarded persons have numerous reactions in common, they are different and distinct in some aspects of motivation and performances utilizing creative type movements. Education can no longer restrict itself to rote learning and behavior modification type training. Informed persons throughout the country insist that educators of all types add a third dimension, that of developing human creativity. There is no justification for excluding the profoundly mentally retarded person from the manifestation of this concept.

The ambulatory, nonambulatory, and aged profoundly and severely mentally retarded persons all have the ability to perform creatively. Creativity has many definitions. The one idea expressed in all definitions is that of "novelty" which is derived from a rearrangement of existing knowledge or conditions. Regardless of the theory or the definitions, all measures of a person's creativity seem to be based on the product produced. This is nothing more than society attempting to place the values of the majority on the minority. The power of society (i.e., house parents and teachers) to control creative impulses often disturbs the equilibrium of the profoundly mentally retarded person. He feels powerless, isolated, and insignificant in events which affect his life. Possibly, because of this, he may withdraw and prefer immobility to creative activity of any kind.

The key to eliciting creativity lies in the leader and her ability to broaden her own world, her concept of the profoundly mentally retarded, and her feelings concerning the worth of all individuals. Basically, a noncreative leader will do little to inspire the profoundly mentally retarded to any type of original action. The insensitive, impatient leader will teach her students to withdraw and remain immobile before she will enable them to respond creatively. If the leader is a free individual functioning as a person with feelings, fantasies, and intelligence, the freedom and growth of the student are fostered.

The leader, attempting to develop the spontaneous creative movement of her students, may discover a number of problems. She may become discouraged with the lack of immediate response from the students. She may become disillusioned as the house parents and others responsible for the retarded persons' care begin to complain of their increased movement and more fluent and original thinking. After all a sitting, obedient person is easier to care for than a moving one.

These problems can, however, be overcome if the leader cares enough. Involvement in the inservice education of others who work with the severely handicapped is often necessary to change the attitudes, beliefs, and practices of the persons who structure the environment of the severely handicapped and thus can either encourage or stifle their creative development.

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THE ARTS AS LEARNING AND SOCIALIZATION EXPERIENCES

FOR THE SEVERELY HANDICAPPED

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A colorful mural hangs in the reception area of Fort Worth State School. It's a landscape with a large tree, grass, the sun, and colorful vegetation on the ground. It is not a painted mural though. Instead, many brightly patterned materials have been painstakingly stitched together with thousands of big and little stitches. What's so remarkable about that? Just that it was made by students whose intelligence quotients range from 25-35. Students, who formerly were not considered students, who sat and watched TV or stared into space, or absently performed any of the varied stereotypic behaviors (head banging, screaming, moaning, self-mutilation) for the major portion of their day.

If you were to walk into their classroom today you would see a very different picture. A small group at one table painstakingly cutting out material. Another small group sewing pieces of material together. Two or three at the ironing board pressing out materials. A hub-bub of activity...A feeling of warmth...Babbling and giggling. But mostly, you'd see individuals who are interacting with other individuals. Human beings, who, although severely handicapped, are maintaining the basic dignity, worth, and love to which they are entitled by birth.

You might feel a warm altruistic glow and think to yourself, "Now, isn't that nice to keep these poor unfortunates busy." But, they're not just being kept busy. They're learning! Art for them is not busy work. It's not just fun--it's education. Art is the medium through which they are being taught.

If we examine more closely what occurs in creating the tapestry mural, we find incorporated into the learning process fine motor skills, language skills, cognitive skills, and social affective skills. Add to this the pleasure of creating an artistic product and it's easy to see that a great deal of true and beneficial learning takes place in this art experience.

In by-gone days, the institutionalized population has not been acclaimed for wild enthusiasm for learning. A large number of these children are extremely lethargic and disinterested in their environment. Apathy has been one of the principal obstacles to overcome. The use of music, art, puppetry, and drama appears to offer a dynamic and unifying approach to develop an increased awareness of all the senses. For it is through this

ability to see, feel, hear, smell, and taste that interaction between a human being and his environment take place. The complete involvement of the individual in a purely physical, sensory activity stimulates and encourages exploration of and identification with the environment. This is the foundation of all learning. One must be able to listen, not just hear; to be aware of differences and details, not just see; to respond to differences in textures, temperatures, sizes, not just touch; to learn to utilize the sense of smell and taste for pleasure and safety purposes, not just to eat and breathe. Integration of sensory information precedes all further learning. One must reach, grasp, and hold to enable him/her to have the fine motor skills required for dressing, feeding, and toileting skills which lead to independence. One must be able to use the thumb in opposition to fingers before he/she can be taught a vocational skill which can make him/her a contributing citizen rather than a permanent dependent in an institution at a tremendous expense to society. One must be able to function as part of a group and respect the rights of others within that group if she/he is to function within the parameters of the community.

That these behaviors, and much more, can be taught through the arts is inherent in the sensory nature of those activities. Music is a prime example. Music has long been known for its therapeutic value with the emotionally disturbed, the aged, the tired. Music as a medium for teaching is virtually unlimited! Music creates an atmosphere conducive to self-expression motorically, affectively, and cognitively. When music activities are carefully planned and coordinated in the curriculum, body movement, spatial awareness, language, health and safety concepts, vocabulary, self concept, and group awareness and interaction can all be incorporated. The only limitation to the use of music as a tool for teaching lies within the individual limitations of the teacher. The creative teacher, although not necessarily musically inclined herself, can use music to motivate, stimulate, relax, and to maintain interest. Songs which teach a handicapped person to button, zip, and snap can be written to an existing tune and individualized according to the unique need. The tempo can be slowed down or accelerated, whichever is appropriate to the child.

If theories of advertising are true, intensity, frequency, and duration are a strong impetus in drawing attention. The chords of a guitar accompanied by the student's name being sung may provide the stimulus to attract and hold the attention of a non-responsive child. If repeated frequently enough and for a duration of time which allows for integration of the stimuli, it can be the beginning point leading to a whole chain of responses; responses which lead to interaction with the environment.

Movement to music has been part of life since primitive days. Capitalizing on this instinctive response to a beat and rhythm offers hope for teaching to all areas of exceptionality: the retarded, the emotionally disturbed, the physically handicapped, the child with learning disabilities. Music is fun and exciting and the learning experience can be made fun and exciting when it is interwoven into the curriculum in such a way as to direct learning to specific objectives. Teaching the severely spastic child to hold eating utensils in order to independently feed himself may stem from teaching him to hold a rhythm band instrument. It may take him (her) a long time to reach for and grasp that instrument but it's a lot more motivating to reach for something bright and shiny that makes some good noises than to reach for a mundane item such as a spoon. After all, when it's difficult to achieve, it's easier to be fed than to feed oneself.

Children confined to a wheelchair often have limited movement of any limb. Again, being motivated by the instinctive reaction to a beat and to rhythm often encourages use of these limited limbs which lead to better circulation and less chance for atrophy or further deterioration. If a child's arms can be strengthened so that he can push his own wheelchair, this lessens the dependence on others to move himself freely around in his environment. He has some control, some decision making, some alternatives in his response repertoire. Through music and songs, these physical responses can be taught.

Music obviously is no panacea. Not every child can or will respond. But, just as obviously, it offers new avenues for exploration if we view the severely/profoundly/multi-handicapped individuals as human beings. As human beings, they are individuals of worth and dignity with human rights to live their lives to the fullest degree possible.

Arts and crafts offer the same unlimited possibilities for learning. One doesn't have to create a Mona Lisa to experience the pride of creating. One doesn't have to depend on crayons, oils, or watercolors as the only medium. Nor does one have to rely only on arms and fingers to produce an artistic creation. Feet and toes using tempora paints, or tempora paint thickened with Ivory Snow or thinned with Ivory Liquid, can produce exotic pictures. Have you ever thought of using chocolate pudding? Then even the tongue and nose become instruments. Just putting the physically handicapped out of the wheelchair and down on the floor where she/he isn't fighting gravity and exposing them to a wide variety of interesting textures, colors, and tastes may provide the stimuli to interest the severely handicapped in experimenting with his (her) environment. If the child tries to move his arms to make a swirl of color, or if the physical

therapist or teacher moves the arms for him (her) and the child is rewarded by a design she/he has made, there is a far greater chance that she/he will attempt to move the arms again. The possibility of strengthening the arms and generalizing movements to pushing the wheelchair is increased.

Using the hands and fingers in a productive manner demands fine motor agility. The ability to pick up an object, to hold an object, to release an object at will is part of the developmental sequence which we observe in the infant in the first few months of life. But when neurological deficits or profound retardation occur, this normal sequence is interrupted. Motor and reflex skills, which we expect to develop naturally, must be trained. Intervention at the earliest moment possible can be instrumental in lessening the degree of handicap, in circumventing the handicap or even at times in ameliorating the handicap. Through the arts we can provide intervention strategies.

If the teacher, parent, or therapist sets a realistic objective and then carefully analyzes the gross and fine motor skills necessary to achieve the objective, activities which stimulate the movements can be devised. For example, if the objective is to develop self-help skills which will permit a form of independence, each skill must be broken into small increments. The act of feeding oneself is a prime example. It is necessary to reach for, grasp, and release a utensil, to move the arm to bring food up and down, have enough hand-eye coordination to get food on the spoon or fork and to the mouth and to reach across the midline. How can we develop these skills through art? Just looking at the first step--to reach, grasp, hold, and release. The aforementioned finger painting with a variety of textures and colors can stimulate this skill. Use of rhythm band instruments, push-pull musical toys, rolling clay, finger puppets, crayons, paints, objects such as strings, yarn, leaves, sticks, stones pushed or pulled through finger paint, aerosol shaving cream, macaroni, spaghetti, bean products pushed through finger paint, etc., etc., etc. You've read them all at one time or another. Nothing new. No reinvention of the wheel. The only difference in this kind of curriculum is that the objective is to develop motor skills to enable the individual to feed himself. The means for reaching that goal are stimulating, motivating, creative, exciting, and fun. Fun for the child and fun for those working with him (her). The trainer may have to model and skill, or physically move the child's arm, hand or fingers through the motion, gradually lessening the guidance, or may have to give verbal prompts and cues, or may have to use concrete reinforcers (some sensory or multi-sensory rewards) on a continual basis gradually reinforcing on an intermittent basis. In other words, use every learning technique now known to attain the desired

results. The principles of frequency, intensity, and duration held in addition to principles of learning applied to a fine arts program with realistic and measurable objectives hold promise for a greater degree of development and independence in a population once confined to the back ward or nursing unit of an institution.

Application of these same principles is possible (and probably even more productive) in relation to the trainable retardate, the educable retardate, the emotionally disturbed, and the learning disabled child. Learning doesn't have to be painful; doesn't have to be dull; doesn't have to be unrealistic. It does have to be stimulating, exciting, fun! If it is to be learning that is lasting, that is conducive to life sustaining skills and independence, it must be stimulated in such a way that the child wants to participate, is motivated to try again and again, and is not placed in a situation where he is right or wrong.

No, we don't cure mental retardation nor severe handicaps through the arts. But, we can provide a medium through which each individual can express himself. One which is pleasurable and satisfying; which can develop muscular and motor movement; which can stimulate and motivate the acquisition of further skills leading to independence (dressing, feeding, and toileting); which can help each individual to reach the ultimate potential of which she/he is capable regardless of the limitations of that potential; one which can provide each human being the dignity and worth which is his right.

And isn't that what life is all about?





RESEARCH IN CREATIVE ARTS FOR THE HANDICAPPED

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Research is a high hat word that scares a lot of people. It needn't It is nothing but a state of mind--a friendly, welcoming attitude toward change It is the problem-solving mind as contrasted with the let-well-enough alone mind. It is the composer mind instead of the fiddler mind. It is the "tomorrow" mind instead of the "yesterday" mind.

--Charles Franklin Kettering

Research, creativity, and art are inextricably linked in the self actualizing person. All three endeavors seem to emanate from a strong inner drive to do and to be--to discover, explore, question, play with alternatives, synthesize in new and different ways, innovate, change, and originate.

Simply defined, research is the art and the science of finding answers to questions. What then is art? Robert Henri states, "art, when really understood, is the province of every human being." It is simply a question of doing anything well." Carleton Noyes says, "Art is creation. For the artist it is creation by expression; for the appreciator it is creation by evocation." Anne Schley Duggan, dance educator and Dean of the College of Health, Physical Education, and Recreation at the Texas Woman's University from 1927 through 1973, taught her disciples,

Art is an expression of feelings, ideas, emotions, and experiences with a definiteness of form and a high degree of skill. The art object should be enriching, uplifting, and have a quality that makes a person better from a spiritual point of view.

Research undeniably is an art. It embodies the aspirations experienced by every dancer, musician, and actor who disciplines himself to hours of rehearsal in order to achieve some measure of excellence and/or perfection. The striving for excellence may be a self actualizing nature, as in basic research, or a dimension of the desire to communicate, to share, and ultimately to improve the quality of life as in applied research.

Science, derived from the Latin word scientia, fr sciens, -entis, present participle of scire to know, is defined by Webster as "knowledge obtained by study and practice." The word science refers also to the processes of gaining or creating knowledge. In the art world, it can apply to the process of creating an art product, of choreographing a dance, or producing an original play. The traditionally accepted cognitive processes involved in creating knowledge and/or art within the research context are deduction and induction.

Deduction refers to taking something which is known, accepted, and rather universally cited or practiced and analyzing it, subtracting from it, playing with it in new and different ways much as dancers over the years have taken movements from Graham, Wigman, or Humphrey and incorporated them into new choreographies.

Induction refers to bringing forth one's own movements, ideas, or thoughts, to improvising, or to making one's own observations rather than testing, questioning, and playing with those of others. The scientific method, a rather lofty contribution attributed historically to Darwin, the father of modern day research, is simply the combination of deduction and induction in continuous interaction as a researcher seeks to create an art product, i.e., anything done well.

Questions Needing Research in the Creative Arts

The creative quality of an art and/or a science, i.e., of research itself depends upon the presence of the behaviors enumerated in Table 1 on page 3. Traditionally artists have used their creative talents as a means of self expression. Growing concern for the quality of life experienced by all persons, including the handicapped, leads to such questions as: (1) can exposure to the creative arts improve the quality of life experienced by severely handicapped persons; (2) specifically what behaviors can be changed through participation in the creative arts; (3) which learning experiences in music, dance, drama, and the visual arts are most effective in changing behaviors; (4) how do specific handicapping conditions affect such creative behaviors as fluency, flexibility, originality, and elaboration; (5) how do handicapped and nonhandicapped children compare with respect to artistic skills or achievements as measured by ratings of their art products; (6) what preservice and inservice education experiences should regular artist-educators have in order to effectively teach the handicapped?

Research Procedures for Finding Answers to Questions

Belief that creative arts belong to all persons, including the handicapped, and the desire to implement our beliefs commits us to active involvement in research. What procedures then are entailed in the art and science of finding answers to questions? The artistic-scientific process is characterized by five steps:

1. Statement of the Problem

This step begins with the selection of one specific question. It entails deductive reasoning as one reviews all available related literature and interviews authorities in an effort to identify what is already known and to deduce relevancies for one's own study from the existing body of knowledge. Related literature is usually found by going to the library and using a reference book like Education Index or a computer process like ERIC or DATRIX. Often in the creative arts, no published research exists. In such instances, the artist must rely solely on inductive reasoning, i.e., improvisation of ideas based upon his personal observations and experiences. Combined deductive and inductive thinking leads to listing the limitations of the study. These usually include quantitative statements concerning who, where, when, what, and how. This step ends with synthesizing all of the thought processes up to this point into one or two paragraphs called the Statement of the Problem.

2. Formulation of Hypotheses

Two types of hypotheses allow a choice. If the study calls for statistical treatment, the statistical or null hypothesis is chosen. It is often worded: there is no significant difference between the two groups. If the study employs no statistics, research hypotheses are used. These are simply sentences, written in comfortable language, representing possible answers to the questions posed at the beginning of the investigation.

3. Collection, Organization, and Analysis of the Data

The method of research determines the nature of this procedure. In historical, philosophical, and much sociological research data are simply the notes taken at the library or from various primary sources like interviews, photographs, documents in court houses, or minutes of meetings. Their organization and analysis relies upon combined deductive-inductive reflective thinking processes for synthesis into concrete findings with lucid interpretations.

In experimental research, data are generally collected twice, before and after the instructional period. Called pre-tests and posttests, or trials, the data can be test scores, ratings by judges, videotape documentation, or film such as that described in the article on photogrammetry. A statistical procedure called a test of significance is used to determine if the children actually benefitted from the instruction in or exposure to the arts.

In descriptive research, no attempt is made to change behavior, i.e., to teach or facilitate anything. Children are described just as they are and perhaps compared with other groups. If the description is statistical, only one set of data is needed. If the description is to be in narrative form, as in a case study, anecdotes may be written daily. If an analysis of the child's movement is to be made as in photogrammetry, only one filming session is required. Descriptive research, simply to discover the capacities of handicapped children, is often needed as related research before experimental studies to change behavior can be designed.

4. Verification or Rejection of Hypotheses

Statistical or null hypotheses are verified or rejected after completion of the mathematical or computer process called the test of significance which yields a number like 3.71. The number is looked up in a table in the appendix of a research or statistics textbook which tells the investigator whether to accept or reject the null hypothesis.

Research hypotheses, written in comfortable language, are simply rejected or accepted after the deductive-inductive reasoning procedures enable the researcher to classify and organize the facts and evolve an interpretation.

5. Formulation of Conclusions

When all the data have been synthesized and reported as findings, the researcher must then draw out one or two conclusions. These should be forceful statements with enough powerful facts behind them to change teaching practices in the field, to alter philosophies, beliefs, or attitudes, or to convince a funding source to provide monies for creative arts programs for the handicapped.

Comments to the Pure in Heart and Art

The arts, like all disciplines, are continuously changing. Where once all art products were believed to have form (refer back to Duggan's definition), free form or no form is now well accepted. Where once art was believed to encompass beauty and to be uplifting and spiritual, it now can be totally abstract,

bizarre, discordant, ugly, or simply a happening--just as it is. Ours is the generation that defends, "beauty is in the eye of the beholder." Perception is a uniquely, individual phenomenon, and many modern day artists are reluctant to establish standards or criteria for evaluating art products and processes. Herein lies a grave problem for artists who would also be educators seeking all means to facilitate arts for the handicapped.

Research is deeply rooted in measurement and evaluation. To show behavioral changes in handicapped children which occur as the result of creative arts experiences between a pretest and a posttest, the artist must find some aspect of creative behavior or art performance which can be measured. Granted, this is indeed a compromise to those who believe that the arts cannot and should not be subjected to evaluation. We all believe that many kinds of behavioral changes are not easily measured, but researchers are also dreamers--committed perhaps to the impossible dream that if something exists, and we try hard enough, we can measure it. It is to this end that many researchers apply their creativity--exploring, testing, playing, inventing, revising, and discovering new and better ways to evaluate growth and development in children.

Research is perhaps the most powerful tool in all the world for getting money from administrators and funds from agencies. Persons responsible for budgetary decisions act on the basis of facts and statistics; they are most responsive to simple one and two group experimental research designs that show significant differences in children's behaviors following exposure to a creative arts program. If the artist's belief in arts for the handicapped is great enough, does not the end justify the means? If monies for expanding arts programs for children throughout the nation can best be attained by measurement, evaluation, and film documentation, is it not time to experiment with these techniques in the arts?

Aileene Lockhart, well known dance educator and now Dean of the College of Health, Physical Education, Recreation, and Dance at the Texas Woman's University, strongly emphasizes:

It is a destructive bias to assume that art and science are incompatibly different, and a pessimistic outlook to assume that we must choose one or the other of the two cultures . . . the persons who have made the greatest and most lasting impact on our world, both scientists and humanists, have been persons who could never be accused of narrowness of mind or fractionalization of knowledge.

The articles which follow are designed to introduce artists and art educators to methods of collecting data, i.e., of measurement and evaluation, which seem most applicable to research in arts for the handicapped. Through venturing outside our established disciplinary boundaries, we can amass a body of knowledge that shows the arts can benefit all persons. Dance artist, Anna Sokolow, captures the essence of this rationale in her statement:

The important thing is that the art being created now be related to now, our time. The artist must be influenced by his time, conditioned by life around him. If he is not, his viewpoint is limited by the past, and turns back instead of going forward. If he draws on the ever-changing life around him, his work will always be fresh and new. Art should be a reflection and a comment on contemporary life.

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**BCP STRANDS FOR EVALUATING CHANGING BEHAVIORS
IN MUSIC AND RHYTHMS AND ARTS AND CRAFTS**

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Among the few evaluation devices which actually work with the severely handicapped is the BCP, or Behavioral Characteristics Progression, which originated in Santa Cruz, California, in 1973, and now is being used throughout Texas in all residential facilities for mentally retarded clients. The BCP is organized into fifty-nine strands, each of which denotes a specific learning area. Over 2,300 observable behavioral characteristics or traits are included within the strands, two of which focus specifically on the creative arts.

Each of the fifty-nine strands is more-or-less developmentally sequenced. Containing up to 50 specific behaviors, each strand begins with primary behaviors and progresses in small increments.

The BCP is available in three formats: (1) the observation booklet comprised of assessment charts on which the behaviors of six persons can be recorded at one time; (2) the 18" X 40" charts which provide a complete visual picture of an individual's strengths and weaknesses; and (3) the binder which describes the behaviors in slightly more detail than do the assessment charts which are reproduced for this article.

A client's progress is charted by marking or coloring in the traits which presently describe his abilities. A trait is usually colored in if the client can successfully demonstrate it three out of four times or 75 percent of the time. In this way, the BCP gives a pictorial representation of the client's past and present abilities, thereby enabling the teacher to see at a glance where improvement is needed.

The two creative arts strands from the BCP are included in this monograph. The value of the BCP for creative teachers is its concept rather than the specific strands and traits. It is often necessary to add new traits representing easier behaviors when attempting to assess the severely handicapped person. The teacher should not feel locked into any particular strand and should modify and adapt the instrument as needed. It has been found, for instance, in the Arts and Crafts strand that one specific behavior like finger paints must be developed into an entire strand with 50 or so sub-behaviors in order to truly assess the changing behaviors of profoundly retarded or deaf-blind persons.

Particularly useful in helping the teacher break down an activity like finger painting into its parts are various recreation textbooks and articles which present concepts of activity analysis. Among these is the following:

Hayes, Gene. "Activity Analysis: Finger Painting for the Mentally Retarded." Therapeutic Recreation Journal, 1971, 5, 133-

Strands 40 and 41 of the BCP were developed by the Office of the Santa Cruz County Superintendent of Schools, California, 1973. They and the other materials described herein may be purchased from VORT Corporation, P. O. Box 11132, Palo Alto, California 94306.

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MUSIC & RHYTHMS

IDENTIFYING BEHAVIORS:

Moves to music in non-rhythmic way • Marches/dances ignoring beat • Uses rhythm instrument but produces no pattern

Date of observation _____

	1	2	3	4	5	6
1.0 Mimics simple gross rhythmic hand movements (e.g., claps with music) . . .						
2.0 Entertains self playing with musical toys (e.g., push-pull type toy)						
3.0 Mimics simple gross rhythmic foot movements (e.g., marks time with feet) .						
4.0 Moves in circular pattern						
5.0 Sways and rocks whole body using simple rhythmic movement						
6.0 Makes fine hand/foot rhythmic movements (e.g., snaps fingers, taps foot)						
7.0 Plays rhythm instruments						
8.0 Marches in time to repetitious beat . .						
9.0 Shifts body rhythm when music tempo changes						

	1	2	3	4	5	6
10.0 Participates in group songs with singing voice						
11.0 Follows/mimics others' play activities .						
12.0 Hums/sings parts of familiar songs . . .						
13.0 Plays simple rhythmic patterns on rhythm sticks						
14.0 Sings phrases of songs						
15.0 Reproduces some actions to familiar songs						
16.0 Claps to beat of familiar songs or to speech cadence/patterns						
17.0 Bounces ball (rhythmically)						
18.0 Matches notes or tones						
19.0 Imitates high and low notes or tones vocally						
20.0 Plays records at appropriate speeds . .						
21.0 Plays rhythm instrument in simple pattern						
22.0 Improvises body movements to follow tempo/rhythm						
23.0 Sings whole songs by rote						
24.0 Plays rhythm instrument in various rhythm patterns						
25.0 Sings parts of contemporary songs from memory						
26.0 Plays accent beat of music on rhythm instrument						
27.0 Plays a few bars of music on melody instrument						

	1	2	3	4	5	6
28.0 Dances using simple steps (e.g., modern dance or waltz)						
29.0 Sings simple rounds taking one part . .						
30.0 Performs square dancing						
31.0 Plays rhythm counterpoint on rhythm instrument						
32.0 Plays instrument or sings following conductor's direction in group (e.g., loud, soft)						
33.0 Carries simple harmony to melody						
34.0 Participates in social dances with a partner						

41
ART & CRAFTS

IDENTIFYING BEHAVIORS:

Scribbles but does not draw • Tears/rips paper but produces no designs • Uses paste ineffectively • Has difficulty cutting with scissors

Date of observation _____

	1	2	3	4	5	6
1.0 Entertains self looking at picture books						
2.0 Makes one-color drawings						
3.0 Finger paints						
4.0 Colors picture using a variety of colored crayons/pencils						
5.0 Paints pictures using a variety of colors						
6.0 Makes simple shapes from clay						

	1	2	3	4	5	6
7.0 Draws/paints, telling or showing what he is doing						
8.0 Relates color to objects (e.g., colors apples red)						
9.0 Entertains self with resources at hand .						
10.0 Cuts/tears paper to make designs/shapes						
11.0 Pastes materials to make a collage . . .						
12.0 Forms geometric shapes with connecting (e.g., tinker or lego) or stack toys (e.g., blocks, rings)						
13.0 Draws simple recognizable forms on request (e.g., man, dog)						
14.0 Uses art skills to make a craft product (e.g., cut, paste)						
15.0 Cuts/pastes a variety of materials to make 3D design						
16.0 Pastes colored cutouts to make a complete picture						
17.0 Divides pictures into different areas (e.g., ground, sky)						
18.0 Makes simple product by weaving						
19.0 Models with clay						
20.0 Builds objects with common materials (e.g., twigs, paperclips)						
21.0 Designs and constructs collages						
22.0 Uses arts and crafts skills during leisure time						
23.0 Scales objects in drawings (e.g., car larger than man)						

	1	2	3	4	5	6
24.0 Carves soap, balsa wood						
25.0 Entertains self with solitary games . .						
26.0 Uses a variety of art techniques for effect (e.g., shading)						
27.0 Expresses movement in drawing						
28.0 Uses wood-working skills to make a product						
29.0 Assembles plastic or wood kits						
30.0 Uses sewing skills to make a product . .						
31.0 Draws simple perspectives						
32.0 Copies simple art motifs/geometric designs						
33.0 Makes decorative house accessories . . .						



OBSERVATION AND RATING OF MOTOR CREATIVITY

Claudine Sherrill, Ellen Lubin, and
Lauren Routon
Texas Woman's University

Movement appears to be the predominant characteristic by which the creativity of the severely handicapped (and often nonverbal) child can be evaluated. When presented with rhythm instruments or arts and crafts materials, for instance, does the child move toward them? Does he use them in one way or several? Do his responses seem random and inappropriate, or purposeful and relevant? How does he use time, space, force, and flow?

As part of a longitudinal study of motor creativity at the Texas Woman's University, several studies have been completed and others are underway. The movement responses of preschool handicapped and nonhandicapped children to novel play apparatus such as the Lind Climber and London Trestle Tree Equipment have been videotaped at regular intervals and then subjected to analysis by several independent judges or raters.

What Is Motor Creativity?

The theoretical construct of motor creativity seems to have been innovated in the early 1960s by Waneen Wyrick Spirduso, now chairperson of the Physical Education Department at the University of Texas at Austin. The Wyrick test of Motor Creativity, first published in 1966, included forms for assessment of motor originality, motor fluency, and motor creativity. The items comprising the tests closely paralleled those on the paper-pencil tests of Torrance. Likewise her definitions of creativity were consistent with those of Frank Williams (see Table 1 on page 3), as well as other leading authorities in creativity.

The TWU Motor Creativity studies of young children are based on the ideas and tests of Wyrick and Torrance. All data are collected through videotape or other film techniques to allow observers an opportunity to see a movement as many times as needed. The explanations which follow show how motor creativity scores have been derived.

Motor Creativity appears to encompass fluency, flexibility, originality, and elaboration as well as such affective domain behaviors as risk taking, curiosity, imagination, and courage. Wyrick, however, limited her studies only to originality and

fluency and thus derived a motor creativity score by changing the motor fluency and motor originality scores to standard scores and averaging them. The TWU studies have paralleled this approach of Wyrick.

Motor Originality is the uniqueness of movement responses. Videotapes are viewed, and every movement is tabulated according to type of movement (as walk, run, climb, hang), amount of body used (total, one arm, both legs, etc.), direction, dimension, path, focus, speed, and other movement elements appropriate to the art under study. The tabulation sheet with organized spaces for recording responses in each of these categories is, of course, prepared ahead of time. These tallies are then organized into a rank or frequency distribution so that the responses can be assigned 2, 1, or 0 points depending upon their frequency of occurrence in the total population tested. The motor originality score then is the sum of the 2, 1, or 0 ratings assigned to the child's individual movements.

Motor Fluency is the production of as many ideas or movements as possible within a given amount of time. The movements should be relevant rather than accidental, random, or self destructive as sometimes occurs among the severely handicapped. To derive a motor fluency score, the judge simply views the videotape and records every movement and/or contact with the play apparatus or arts and crafts supplies or rhythm instrument. The sum of these responses in a given period of time is the fluency score.

Using these definitions and procedures, findings on motor creativity are presented by Sherrill and Rowe (1975), Rowe (1976), and Sherrill, Lubin, and Routon (1977). The procedure of tabulating every movement in a five minute videotape is, however, time consuming and tedious, particularly when one has 30 subjects, each with a five minute pretest videotape and a five minute posttest videotape.

The TWU Motor Creativity Rating Scale is an attempt to find a new way to evaluate children on the recognized components of creativity. It is still in the pilot testing stage but seems to hold promise.

TWU Motor Creativity Scale

The TWU Motor Creativity Scale identifies basic questions under the subheadings of originality, fluency, flexibility, and elaboration which are answered immediately after a videotape of one child is viewed. Each question is first answered by circling above average (AA), average (A), below average (BA). Then on the basis of these answers, the rater uses a ten point

scale to assign an overall rating to each of the four components of creativity.

Ten represents the highest rating on this scale which assumes that the assignment of 10, 7, 5, 3, 1 ratings will be in keeping with normal curve expectations. Thus, about 2½ percent of a large sample of subjects would receive a 10; about 14 percent would receive a rating of 7; about 68 percent would receive a 5; about 14 percent would receive a 3; and about 2½ percent would receive a rating of 1.

The scale therefore makes possible a range of total motor creativity scores from 1 to 40. It also allows for statistical treatment of ratings on each individual component of creativity.

As in the proper use of all rating scales for evaluation of behaviors and/or research, the child's score should be the average of the ratings of three independent observers. At this time the TWU Motor Creativity Scale has been applied only to movement. It is believed that it holds potential also for rating motor creativity in the arts. The success of the scale depends largely upon the observational skills of the raters. Recommended readings on observational techniques therefore follow.

Recommended Readings

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TWU MOTOR CREATIVITY SCALE

10 7 5 3 1 Overall

Originality

- AA A BA 1. Are his movement responses unusual, deviant, unexpected?
- AA A BA 2. Does he experiment with his body or body parts in new, unique, different, bizarre, clever ways?
- AA A BA 3. Does he use time (i.e., accents, speed, even and uneven) in unusual ways?
- AA A BA 4. Does he use space in interesting, different ways (direction, dimension, curved or direct paths, focus)? Does he remain on the floor or interact with benches, tables, unexpected props in the room?
- AA A BA 5. Does he use force (strong, weak, light, heavy) in unusual ways?
- AA A BA 6. Does the flow of his movement seem to vary intentionally (easy, graceful, disharmonious, bound)?

10 7 5 3 1 Overall

Fluency

- AA A BA 1. Does he make lots of attempts within the given time period?
- AA A BA 2. Does he continue moving the entire time?
- AA A BA 3. Do his movements seem quick, energetic, vivacious?
- AA A BA 4. Are his movements relevant?

10 7 5 3 1 Overall

Flexibility

- AA A BA 1. Are his attempts varied in nature, depicting rapidly changing ideas?
- AA A BA 2. Do some responses entail manipulation of time, space, force, and flow so that these are continuously changed?
- AA A BA 3. Do some responses entail the entire body while others use body parts, extensions of body parts, or objects in the room?
- AA A BA 4. Do his approaches use different muscle groups? Different sense modalities?
- AA A BA 5. Does he frequently change categories of movement as walk to jump to roll to clap? Locomotor to nonlocomotor and vice versa?

10 7 5 3 1 Overall

Elaboration

- AA A BA 1. Does he take a simple movement or idea and add on to it in several different ways? Stretch or expand it?
- AA A BA 2. Do his movements reflect embellishments of several ideas?
- AA A BA 3. Is he content to experiment only with his body or does he incorporate props, weights, and furnishings of the room into his exercise?
- AA A BA 4. Does he add sound effects? Use his voice? Make noise?



MOTION PHOTOGRAPHY: A TOOL FOR THE ANALYSIS OF
MOVEMENT PATTERNS IN THE CREATIVE ARTS
FOR THE SEVERELY HANDICAPPED

Marilyn M. Hinson and Terry Lawton
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Each of the creative arts lends itself to movement which can be measured. Changes in hand-eye coordination which occur through various arts and crafts can be captured on film. Likewise the movements of the limbs in using rhythm instruments and puppets and of the total body in dance and drama can be recorded on film and analysed for changes which seem to result from guided discovery sessions in the arts.

It is our viewpoint that motion photography, or close-range photogrammetry, as it is currently called, is the most viable means we have of collecting and analyzing movement pattern data of the severely handicapped child. The following pages are intended to give some insight into method, equipment needs, a protocol for the filming session, an overview of analysis methodology, and a brief treatment of interpretation of findings. Perhaps with this background, the reader's first experience in the world of motion photography will not totally be one of trial, error, and complete confusion!

Exposure Rates

The rate at which film frames are exposed can vary from one to more than one million exposures per second according to the camera equipment available. These, of course, are the extremes in the spectrum of camera speeds. Most aspects of human motion can be analyzed at exposure rates between 64 and 500 per second. The concept of exposure rate may be clarified if it is remembered that 24 exposures per second will yield film which will not, when it is projected, distort the speed of movement. Exposure rates of less than 24 per second will accelerate motion (the "Charlie Chaplin" effect) whereas rates greater than 24 per second will provide slow motion. For movements which are inherently slow, such as walking or finger painting, exposure rates of 64 per second are quite adequate since the already slow movements need not be further slowed to any great extent to permit accurate analysis. Fast movements such as striking rhythm instruments and dancing should be filmed at rates of approximately 200 per second to optimally slow the action. Exposure rates of 500 per second are used in studies of ball velocities, golf swings, tennis serves, and so forth.

Equipment

The equipment required for high speed motion photography must, of necessity, be somewhat specialized. It is strongly recommended that representatives from the various manufacturers be consulted before final choices are made. A list of manufacturers and their products can be easily obtained from camera rental agencies.

The Camera

A sixteen millimeter (16 mm) camera is preferable to an eight or super eight millimeter camera because the size of the film, being twice as large, is easier to magnify to large image sizes. In addition, 16 mm cameras typically have more and higher exposure rate settings than do their smaller counterparts. If cost is a factor, however, a super eight camera may be used temporarily but only if it is capable of achieving a rate of at least 64 exposures per second. Other factors important to camera selection are ruggedness, ease of operation, and portability. Ketlinski (1971) provides a valuable summary of the characteristics of several camera types currently available on the market.

Film

If a super eight camera is to be used, the film of choice is an indoor or outdoor color film. A black and white film for these cameras is difficult if not impossible to purchase; but since the size of the film is small, the cost of color film is not prohibitive as it is with 16 mm film. The film most often used with a 16 mm camera is a tri-X black and white reversal film. It is a so-called "fast" film which allows its use in conditions of poor light. Purchase and processing costs of this film are about one-half that of color film. All film should be stored in a refrigerator until a few hours before use. The cold environment greatly extends shelf life.

Tripod

A sturdy and adjustable tripod is almost a must. A hand-held camera will move a surprising amount because of the sway or lack of steadiness of the operator. On a tripod, the camera is stable and actually safer. It will not be dropped or stepped on while not in use, nor will it be as prone to accidental opening which ruins the film inside. In addition, a camera on a tripod can be replaced at standardized locations by placing marks on the floor for each of the three tripod legs.

Light Meter

A light meter is used to measure the ambient light in order that lens and shutter settings can be made correctly. More and more super eight cameras are becoming available which have automatic settings; the built-in light meter sets the lens opening without intervention from the operator--a feature that is tempting to all of us. It must be remembered, however, that the operator is at the mercy of the accuracy of the camera. Since film data are costly both in terms of money and time, it is recommended that a light meter be used to verify the automatic settings.

Light meters may appear to be complicated but are actually quite simple to use. One need only set the ASA* and the shutter speed dials to the correct position, and then hold the meter next to the camera lens. When the button that activates the meter is pressed, the needle will point to the appropriate lens f stop setting. But remember--never leave your light meter in the sun. The cells can be irreversibly damaged.

Shutters

Motion picture cameras are designed around shutters which rotate behind the lens and in front of the film. A portion of the shutter is cut away so that light is allowed to pass through the lens and expose the film. If the major portion of the shutter is cut away, a great deal of light passes through and the film "sees" the object being photographed for relatively long periods of time. If the object is in motion, the film records a blur rather than a sharp image. Precise analysis of such data is, of course, severely limited. It can be seen that it is of utmost importance to know the opening of the shutter in the camera. Shutter openings are referred to by the fraction which results from dividing the amount, in degrees, the shutter is cut away by 360 degrees. For example, if a shutter has 120° cut away, it would be a one to three or $1/3$ shutter (120° divided by 360°). When the shutter fraction is known, a quantity known as shutter speed can be quickly calculated by multiplying the shutter fraction by the reciprocal of the camera exposure rate per second. As an example, if a camera comprises a $1/3$ shutter and is set to an exposure rate of 100 per second, shutter speed will be $1/3 \times 1/100$ or $1/300$ seconds. A shutter speed of $1/300$ indicates that every time the film

*ASA is a rating of the film's chemical ability to absorb light. ASA ratings of around 200 depict a "fast" film--one that can absorb light rapidly. ASA ratings of 60 to 100 are those of "slow" film. The ASA is printed on the film container.

"sees" the object, it will do so for $1/300$ of a second. Precise analysis depends upon sharpness of image; blur must be kept to a minimum by manipulating either camera speed or shutter fraction. The following guidelines are offered to aid the reader in the selection of appropriate shutter speeds:

Shutter Speed	Event
$1/100$ sec.	Slow walking
$1/300$ sec.	Fast running
$1/500$ sec.	"Stop" a jump in mid-air
$1/1000$ sec.	"Stop" a golf club in mid-swing

It becomes obvious that the movement to be photographed dictates to the operator the selection of shutter speed, and since shutter speed is based upon both camera speed and shutter fraction, these factors must be kept in mind when selecting equipment. It is recommended that $1/6$ or $1/9$ shutters be installed in cameras that are capable of maximal exposure rates of 64 per second; and that $1/3$ or $1/4$ shutters be chosen for cameras capable of higher rates. Optimum results can be had, of course, if the camera allows for variable settings of shutter fractions. This feature is available, but only on the more costly cameras.

Lenses

An awesome variety of lenses are available for motion cameras, and although super eight and some 16 mm cameras come complete with lenses, it is not the typical case. When lenses must be purchased or otherwise obtained, attention must be given to the space available for photographing. Two-inch lenses are very highly recommended for sharpness of image, however, they may require the photographer to be farther removed from the object than space will allow. One-inch lenses do not provide the same sharpness but do allow for more reasonable camera-to-object distances. There is some argument among motion photographers regarding the use of zoom lenses because of their sometimes questionable resolution, however, we find that if they are of high quality, they are preferable to either the one- or two-inch lenses since by zooming in or out, the viewing area can be made satisfactory without moving the camera.

A Level and a Plumb Line

A spirit level between 18 and 24 inches long should be used to align the camera along the horizontal. Unless this is done, the camera sees the object at an angle and error will be introduced in the analysis. The plumb line, placed in the plane of motion, can serve both as a vertical reference and as a measurement scale by which film distances can be converted to real

distances. Occasionally, objects such as corners of buildings, if outside, or lines formed by the intersection of walls, if inside, appear in the background of the viewing area. These can be used as vertical reference lines, and in this case, a meter or yard stick can be held in the plane of motion to provide the scale factor. The scale factor formula is quite simple and is presented below:

$$\text{scale factor} = \frac{\text{real distance}}{\text{film distance}}$$

Suppose a yard stick is photographed while held in the plane of motion to be used. Upon projection of the processed film, the length of the yard stick is measured to be two inches long. The scale factor becomes

$$\text{scale factor of one inch} = \frac{3 \text{ feet}}{2 \text{ inches}}$$

or one film inch is equivalent to one and one-half feet of real distance. Then, during subsequent film analysis, if it is noted that the object moved three film inches, it is known that the real distance moved was $1\frac{1}{2} \times 3$ or $4\frac{1}{2}$ feet.

Timing Devices

Some means must be provided to verify camera speed settings. Certain cameras comprise a spring tension film drive that requires frequent winding. As the spring winds down while the movement is being photographed, the camera speed can slow considerably. To offset any bias in analysis, it is recommended that a large clock or other device be placed within the viewing area of the camera. Accurate time readings can then be procured regardless of inaccuracies in speed settings. A rather recent advance in motion photography has been that of the built-in timing light generator. These small systems are housed within the camera body and emit a flash of light every one-tenth of one-hundredth of a second. The light is focused to expose only the edge of the film so the image is in no way distorted; by counting the number of flashes in a given sequence of frames, a precise determination of time can be had. Although timing light generators are potentially the most accurate means we have of determining time, they are also the most expensive.

Floodlights and Extension Cords

Indoor filming usually requires the use of floodlights. Several varieties are commercially available, but before making a selection decision, consideration must be given to the heat

produced by the lights. Some floodlights can cause radiation burns if they are placed too close to the subject, and accidental touching of the bulb or housing can be quite injurious. At least two lights and preferably three are recommended for best contrast. One light should be placed approximately 30° from the plane of motion on the right and the second on the left. The third light should be placed in line with the camera. Extension cords should be of the type that have large wire--preferably number 12--to avoid dangerous overloading of electrical circuitry.

Background Area

Some photographers recommend a light, solid color background for all filming; others urge the use of a background that will provide the greatest contrast. We prefer the latter approach, and choose background materials which are specific to the event to be filmed. There is no need to inscribe grid lines on the background material if a scale factor can be generated from a meter or yard stick as explained above; as a matter of fact, the yard stick method is more accurate than the background grid method. A final hint regarding background materials is offered: a card system representing the child's subject number and trial number can be placed in a corner of the viewing area. Identification of film footage will be greatly enhanced.

Film Projectors and Viewers

Most often used for film viewing and analysis is a special projector which has a heat resistant element that prevents the film from burning while the analyst views individual frames. These projectors are designed to move the film in a forward or reverse direction at various frame rates, and by increasing the projector-to-screen distance, can provide large images. (For greatest accuracy, image sizes should be one-fourth or one-fifth of life size.) The recent addition of electronic digitizers to these projectors makes them even more efficient in terms of locating joint centers. Film viewers are also in popular use by analysts. They include a projector, a viewing screen, and coordinate digitizers which can be made to interface directly to a computer. They do have the disadvantage, however, of producing relatively small images.

The Filming Session

If the filming session is well-organized and follows standardized procedures, the time required per session can be reduced considerably. In filming areas which can be secured, equipment can be set up well before the session. If this is not possible, set-up should be accomplished immediately before the session; regardless, the child should not be brought to the

area until equipment has been placed and all settings have been double-checked. The time required to complete these tasks is clearly beyond the patience level of any child, and it is far better to exclude them from this routine.

Filming of most movements of concern to the therapist and teacher can be done adequately from a single camera set-up as shown in Figure 3. It will be seen that movement is performed in the center of the viewing area and is directed at right angles to the camera lens. The operator must confirm that the entire movement to be studied can be seen in the field of view. A practice trial by the child will not only give the operator the opportunity to confirm the sighting, but will also orient the child to the procedure expected. Several trials may be necessary, but care should be taken to avoid fatiguing the child. You are looking for the child's best effort.

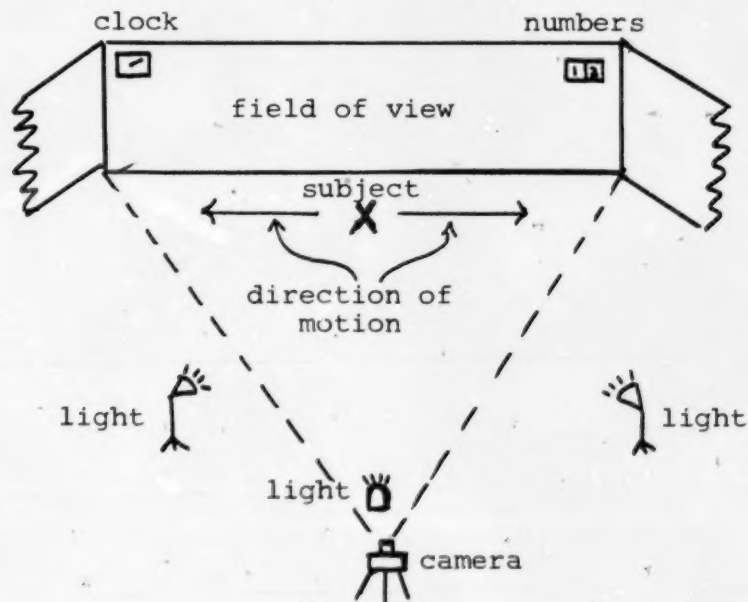


Figure 1. The single camera set-up.

If all aspects of the session are coordinated, a retake will not be necessary. The lights should be turned on, the clock started, the camera started, and the movement begun in sequence. The operator may say, "lights, clock, camera, action" to begin the take, and, after the child has moved completely out of the field of view, end the take by saying "all stop." It should be noted here that camera noises, bright lights, and the strangeness of the filming area can be quite upsetting to the uninitiated. If the child is fearful,

several "dummy" takes may be necessary before best effort is recorded.

The procedures for subject preparation are somewhat controversial. Since typical analysis methodology involves the determination of joint centers of the child, some experts recommend that the several joints of the upper and lower limbs be marked with a white or black tape. This facilitates their location when the processed film is projected. Other motion photographers question the accuracy of such markings by suggesting that when a joint moves, the overlying skin, and therefore the tape marking, also moves. The resulting position of the mark may or may not be at the joint center. We prefer to mark the children if their patience allows and then use the marks, not as absolute indicators of joint centers, but rather as guideposts that the joint center is in the close vicinity. To use no markings at all requires that the analyst be experienced and that the projected images be extremely sharp. The reader is urged to refer to a most informative article by Walton (1970) for additional information on joint markings.

A final item in the filming protocol is that of a data card. Included on the card should be the following:

Subject identification: name or code number, subject number, number of trials performed, number of the trial recommended for analysis.

Descriptive data: age, height, weight, etc. These data are essential to evaluations of developmental stages as well as assessments of segmental weights of limbs and centers of gravity.

Camera settings: camera speed, type of film used, f stop, camera-to-subject distance. In case retakes are necessary, all conditions can be replicated to insure accuracy.

Special comments: remember, a film rarely wears out, but an operator's memory can seldom recall the events of the filming session.

Permission statements: these statements, when signed, should be attached to the data card and retained by investigator until the film is destroyed.

Analysis Methodology

Analysis of movement patterns can only be as precise as the precision of the filming session. Correct camera settings, appropriate background, and reasonable camera-to-subject distances will do much to make you beloved by the analyst. If

these have been accomplished, several parameters can be measured to aid in the interpretation of movement behavior. The parameters that are typically measured are:

Angular and Linear Displacement

This is a measure of the actual movement of the body or body part throughout the activity. Where displacement of body parts is of concern, measurements are taken in degrees or radians; if displacement of the entire body is of interest, measurements are made in linear units such as feet or meters. Each position value measured is subtracted from the initial position value; the results can be utilized to reflect the range of motion of joints as well as total movement of the center of gravity.

Angular and Linear Velocity

This parameter provides an indicator of the speed with which the body or its parts move. Angular velocity is measured in degrees or radians per second whereas linear velocity is reported in feet or meters per second. Velocity measurements are made relative to initial position values as are displacement values.

Angular and Linear Acceleration

Acceleration, either positive or negative, provides an indication as to whether the body or its part is slowing down or speeding up. Angular acceleration is measured in degrees or radians per second per second, and linear accelerations are measured in feet or meters per second per second. Both velocity and acceleration data are obtained by mathematical manipulations of the displacement data taken. Suppose a movement begins with the arm aligned at 20° above horizontal. At the end of, say, 10 frames of film, the arm is positioned at 50° above horizontal. Its displacement is seen to be $50^{\circ}-20^{\circ}$ or 30° . If that displacement occurred in $1/10$ of a second (measured from the clock in the view field or the timing light generator), velocity is calculated by dividing displacement, 30° , by the time involved, $1/10$ second. The result indicates a velocity of 300° per second. Suppose further that an additional 10 frames are advanced and we now observe that the arm is aligned at 90° above horizontal. Displacement for the second position is 90° minus 20° (initial position) or 70° . The time required for this displacement to occur was $2/10$ of a second (the time required to move from 20° to 50° plus the time required to move from 50° to 90°). Velocity of the movement to 90° now becomes 70° divided by $2/10$ second, or 350° per second. Acceleration may now be computed by subtracting the first velocity (300°) from the second (350°) and dividing

the result by the time difference between the two velocity calculations ($1/10$ second). Acceleration is found to be 3500° - 3000° divided by $1/10$ or 5000° per second per second. This process is continued throughout the duration of the movement and, when these points are plotted with time on the abscissa and velocity or acceleration on the ordinate, movement profiles can be generated. These are of considerable value when comparisons are to be made between children or between trials by the same child.

Center of Gravity

The mass of the body is located at a single point, it's the center of gravity. The location of this center changes with changes in body position. Since mobility and stability are directly related to the location of the center of gravity, it is often of interest to determine its position. A simple method for making this determination is discussed by Walton and involves the mathematical combination of the weights of the several body segments. The method is simple and can be done easily by hand if a computer is not available.

Stride Length and Stride Frequency

The length of a stride and the frequency that each foot contacts the ground are indicative with the linear velocity of ambulation. These very simple parameters can be used to determine the developmental maturity of basic movement patterns in the arts. They may also be used as measures of improvement which occurs through therapeutic programs.

Tracings and Stick Figures

These analyses are the most simple to make and are frequently most valuable. If it is only desired to determine what a child looks like while executing a motor pattern, tracings and/or stick figures may comprise the total analysis. Tracings are made by drawing a rough outline of the projected image; stick figures are made by connecting the joint center markings mentioned above.

Others

With more complicated mathematical computations that require, for efficiency, computer input and output, additional data may be obtained. Parameters such as horizontal, vertical, and the resultant forces at each joint and the moments of force or torque at the joints are examples of these additional data. Because they cannot be found by hand within a reasonable time, they will not be discussed here. For the reader who wishes to pursue this methodology, the comprehensive text provided by Plagenhoef is highly recommended.

Interpretation of Analysis

Interpretation of data provided by the analyst actually takes the form of answering the questions posed even before the film is taken. Unless advance questions are asked in a specific fashion, interpretation is likely to become rambling and tangential to the problem at hand. As examples, three questions are posed below which are followed by suggestions for analysis and interpretive actions.

Question: What is the range of movement at the knee during the swing phase of a handicapped child's kick in a dance like La Raspa? In order to answer this question, the analyst need only look at two frames of the film. Locate the first and last frame that show the shank in the swing phase. Measure the angle between the thigh and the shank at the joint center. The difference between the two angles is the angular displacement or the range of motion at the knee. It can now be determined whether the range of motion is limited or within normal values. If the handicapped child demonstrates limited angular displacement, a program can be proposed to increase the range of motion. Subsequent filming sessions will evaluate any improvement with training. Obviously, this process can be generalized to any other joint in the body.

Question: Is the cause of this child's coordination problem the inability of his antagonistic muscles to contract at the proper time in the motor pattern? The answer to this question requires the determination of angular acceleration. Plagenhoef presents a simple graphic method for this determination. The angular acceleration should be determined for each frame of the film at the joint in question. A positive value indicates that the moving body part is speeding up because of the contraction of the agonist. A negative value indicates that the antagonist is contracting and thus slows down the moving body part. The analyst can now look at the pattern of positive and negative values across the frames or time. Very short times to contraction indicate that the antagonist is contracting too soon. Very long times indicate that the antagonist contracts too late. A program to develop strength or flexibility in the antagonistic muscle can now be initiated which is based upon objective evidence. Subsequent filming will demonstrate whether improvement has occurred as a result of the creative arts training program.

A single leg amputee has been fitted with a prosthetic device and is still having problems with gait. Question: Is the child adjusting to the new position of the center of gravity? One of the first parameters the analyst can investigate is the location of the center of gravity with and without the prosthesis. The child may not be able to deal

with the dual change in the location of the center of gravity that has occurred with the loss of the leg and then with the addition of the weight of the prosthesis. Front view film recordings and the technique proposed by Walton can easily provide the answer. We know that the center of gravity should be over the base of support for greatest stability. If the center is found to be located over the child's own leg rather than over the entire base of support provided by the prosthetic device, stability is decreased. A training program could then be started that would ameliorate the problem.

With the data obtained through motion photography, individuals responsible for planning and evaluating creative arts programs can do so with objectivity. In conjunction with information gathered through other testing methods, the therapist or educator can add significantly to the evaluation of movement behaviors in each of the arts. Programs designed to increase strength and range of motion can be implemented on an individual basis--child specific. A program designed to increase the coordination of the handicapped child can be evaluated and documented as the child experiences any number of creative arts activities involving muscular coordinations. Motion photography provides, then, means of making the initial evaluations of motor patterns as well as improvement evaluations. A cure-all? Perhaps not, but it's as close as we've come!

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Sandra Ervin was born with congenital cataracts and underwent five surgeries starting at age four. Although these enabled her to see to some extent with glasses, her vision is still so low that she is considered legally blind. She attended the Texas School for the Blind to complete high school, then attended the Texas Woman's University where she received a B.S. degree. She has taught visually handicapped and blind students in public schools in Abilene, Odessa, and Dallas, Texas, including resource and itinerant programs. She is currently pursuing a Master's degree in Adapted Physical Education at the Texas Woman's University. Also involved in music and singing, she has composed and copyrighted two religious songs. Address: 1818 Melrose, Garland, Texas 75040

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